

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

PLAN AND PROFILE OF
CAPE COD RAIL TRAIL EXTENSION - PHASE II
(BRIDGE NO. D-07-007 = Y-01-010 (BNH))

IN THE TOWNS OF

YARMOUTH & DENNIS
BARNSTABLE COUNTY

FEDERAL AID PROJECT NO. STP/TIP-002S(958)X

YARMOUTH & DENNIS CAPE COD RAIL TRAIL EXTENSION - PHASE II			
STATE	FED. AID PROJ. NO.	sheet no.	Total Sheets
MA	STP/TIP-002S(958)X	1	68
PROJECT FILE NO. 607571			

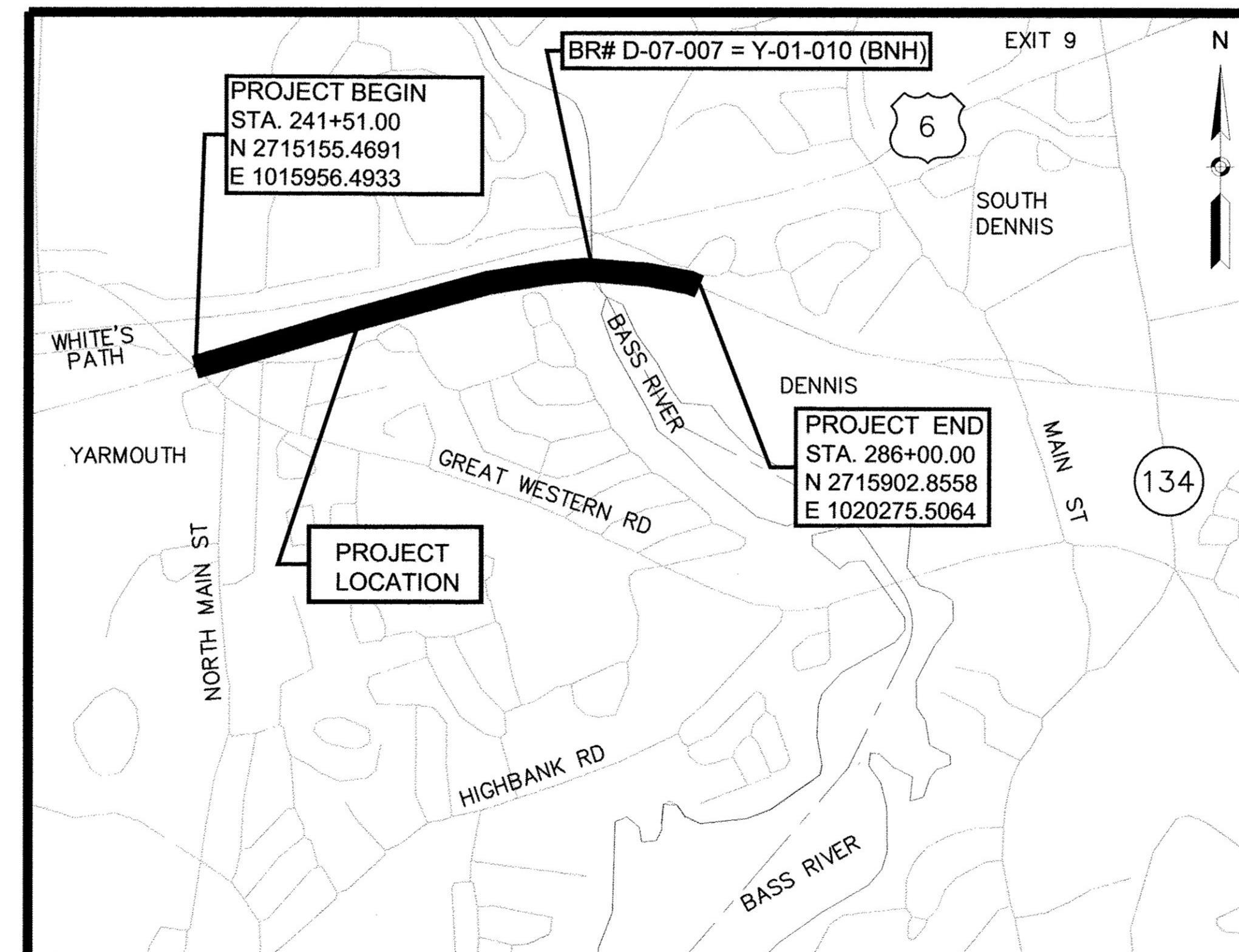
TITLE & INDEX SHEET

607571HD.COV.DWG 18-Aug-2016

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE 2014 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

INDEX

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0 1000 2000 3000 4000
SCALE: 1" = 1000'

LENGTH OF PROJECT = 4,449.00 FEET = 0.843 MILES

PREPARED BY:
CDM SMITH
75 STATE STREET
BOSTON, MA 02109

MASSACHUSETTS
PROFESSIONAL ENGINEER
NO. 1098
LANDSCAPE ARCHITECT

6/16/16
VANASSE HANGEN BRUSTLIN, INC.
101 WALNUT STREET
WATERTOWN, MA 02471

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED:
DIVISION ADMINISTRATOR DATE
HIGHWAY ADMINISTRATOR DATE

massDOT
Massachusetts Department of Transportation
Highway Division

RECOMMENDED FOR APPROVAL

8-19-16
CHIEF ENGINEER RE DATE

APPROVED
8-23-16
HIGHWAY ADMINISTRATOR DATE

GENERAL SYMBOLS			EXISTING			PROPOSED			DESCRIPTION			YARMOUTH & DENNIS CAPE COD RAIL TRAIL EXTENSION - PHASE II		
EXISTING	PROPOSED	DESCRIPTION												
		JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER							RELOCATED SALT MARSH					
		CATCH BASIN							RESTORED SALT MARSH					
		GUTTER INLET							BORDERING VEGETATED WETLANDS (AREA)					
		LEACHING BASIN							IRRIGATION SYSTEM					
		CATCH BASIN CURB INLET												
		FLARED END SECTION (FES)												
		FLAG POLE												
		GAS PUMP												
		MAIL BOX												
		POST SQUARE												
		POST CIRCULAR												
		WELL												
		ELECTRIC HANDHOLE												
		FENCE GATE POST												
		GAS GATE												
		BORING HOLE												
		MONITORING WELL												
		TEST PIT												
		HYDRANT												
		LIGHT POLE												
		COUNTY BOUND												
		GPS POINT												
		CABLE MANHOLE												
		DRAINAGE MANHOLE												
		ELECTRIC MANHOLE												
		GAS MANHOLE												
		MISC MANHOLE												
		SEWER MANHOLE												
		TELEPHONE MANHOLE												
		WATER MANHOLE												
		MASSACHUSETTS HIGHWAY BOUND												
		MONUMENT												
		STONE BOUND												
		TOWN OR CITY BOUND												
		TRAVERSE OR TRIANGULATION STATION												
		TROLLEY POLE OR GUY POLE												
		TRANSMISSION POLE												
		UTILITY POLE W/ FIREBOX												
		UTILITY POLE WITH DOUBLE LIGHT												
		UTILITY POLE W/ 1 LIGHT												
		UTILITY POLE												
		BUSH												
		TREE												
		STUMP												
		SWAMP / MARSH												
		WATER GATE												
		PARKING METER												
		OVERHEAD CABLE/WIRE												
		CURBING												
		CONTOURS												
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)												
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)												
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)												
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)												
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)												
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)												
		TEMPORARY SUPPORT OF EXCAVATION												
		BALANCE STONE WALL												
		GUARD RAIL - STEEL POSTS												
		WOOD RAILING/SPLIT RAIL FENCE												
		CHAIN LINK OR METAL FENCE												
		STOCKADE FENCE												
		WOOD RAILING												
		COMPOST FILTER TUBE												
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING												
		SAWCUT LINE												
		TOP OR BOTTOM OF SLOPE												
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY												
		BANK OF RIVER OR STREAM												
		BORDER OF WETLAND												
		100 FT WETLAND BUFFER												
		200 FT RIVERFRONT BUFFER												
		STATE HIGHWAY LAYOUT												
		TOWN OR CITY LAYOUT												
		COUNTY LAYOUT												
		RAILROAD SIDELINE												
		TOWN OR CITY BOUNDARY LINE												
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE												
		EASEMENT												
		RIP RAP SLOPE TREATMENT												
		BOULDER												
		PROP MATTING FOR EROSION CONTROL												

TRAFFIC SYMBOLS			EXISTING			PROPOSED			DESCRIPTION			GENERAL NOTES:		

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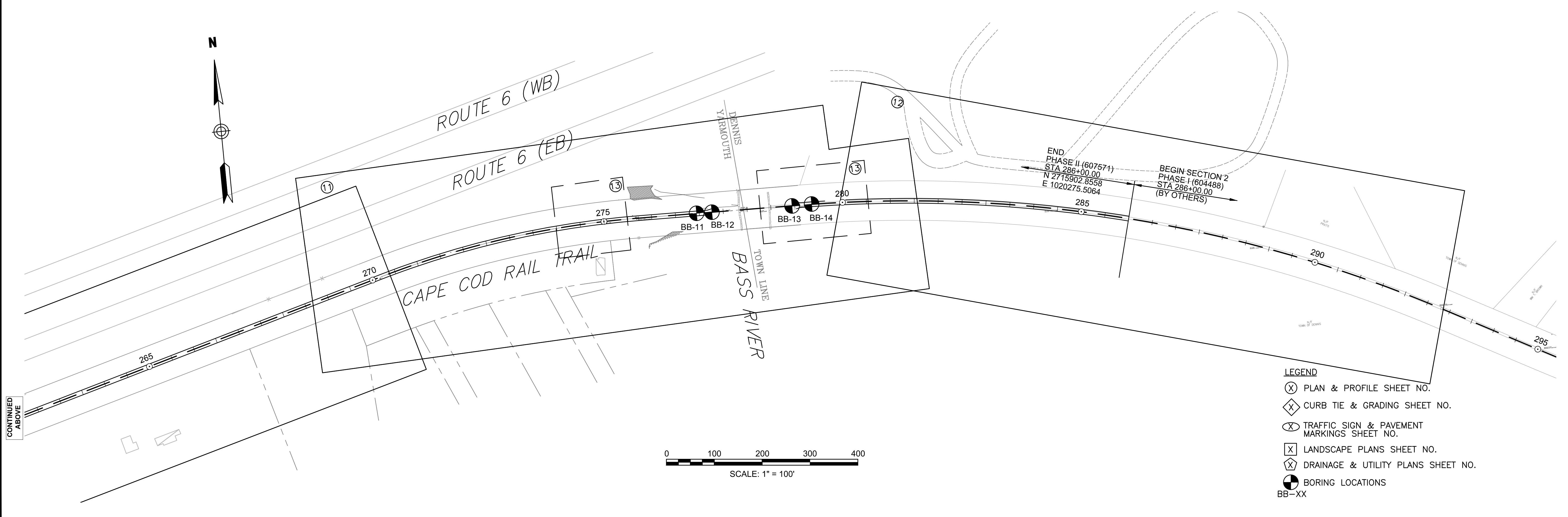
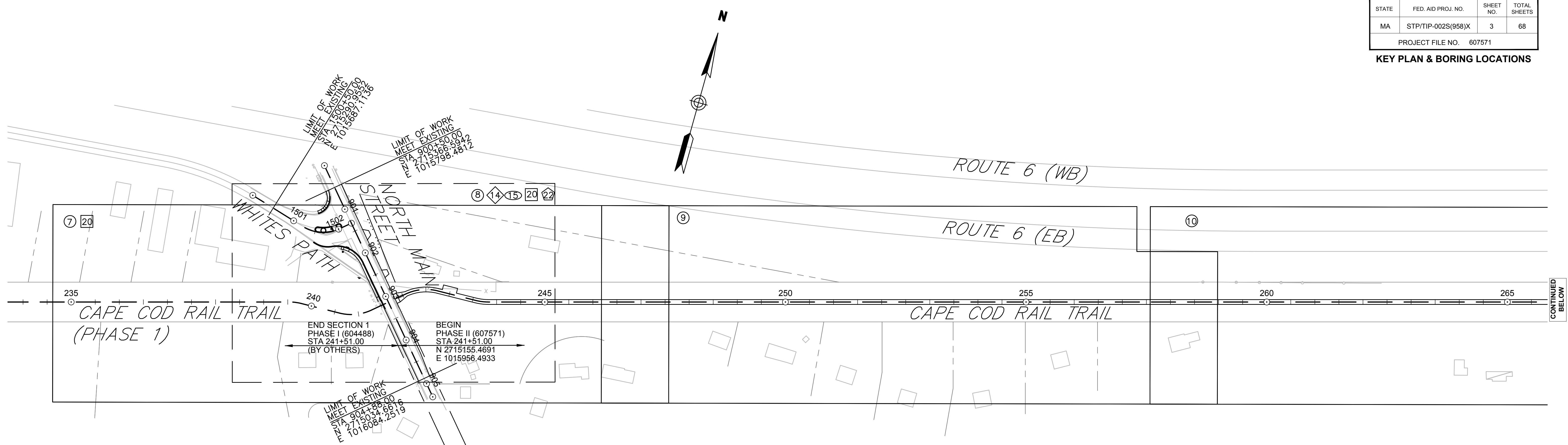
YARMOUTH & DENNIS
CAPE COD RAIL TRAIL EXTENSION - PHASE II

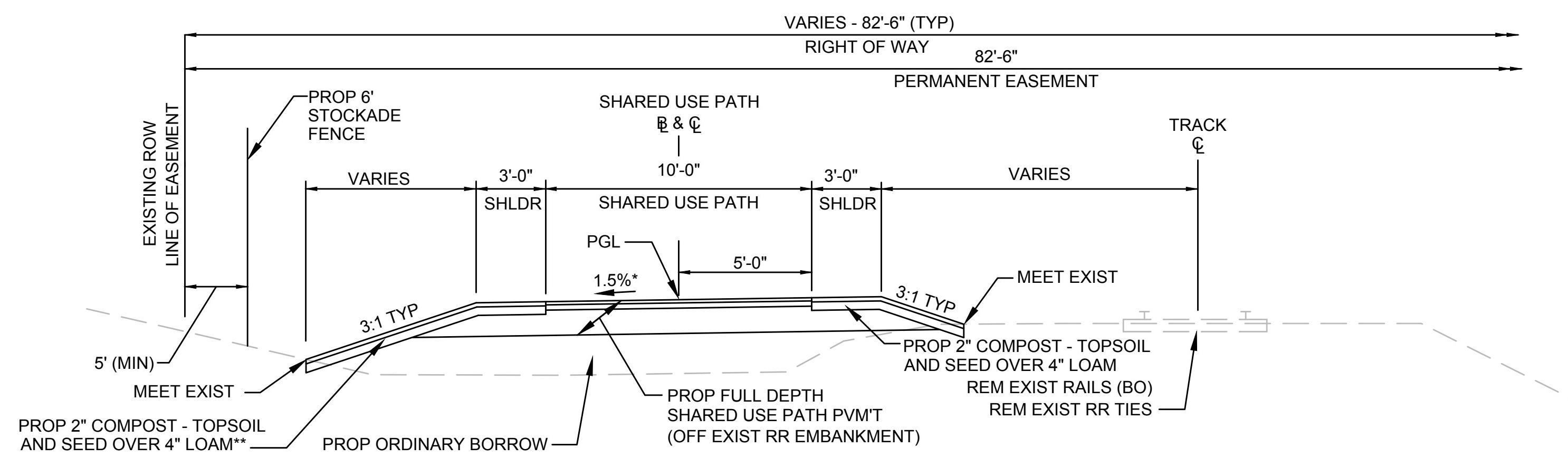
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	3	68
PROJECT FILE NO. 607571			

KEY PLAN & BORING LOCATIONS

Plotted on 25-Aug-2016 1:07 PM

607571HD (KEY).DWG

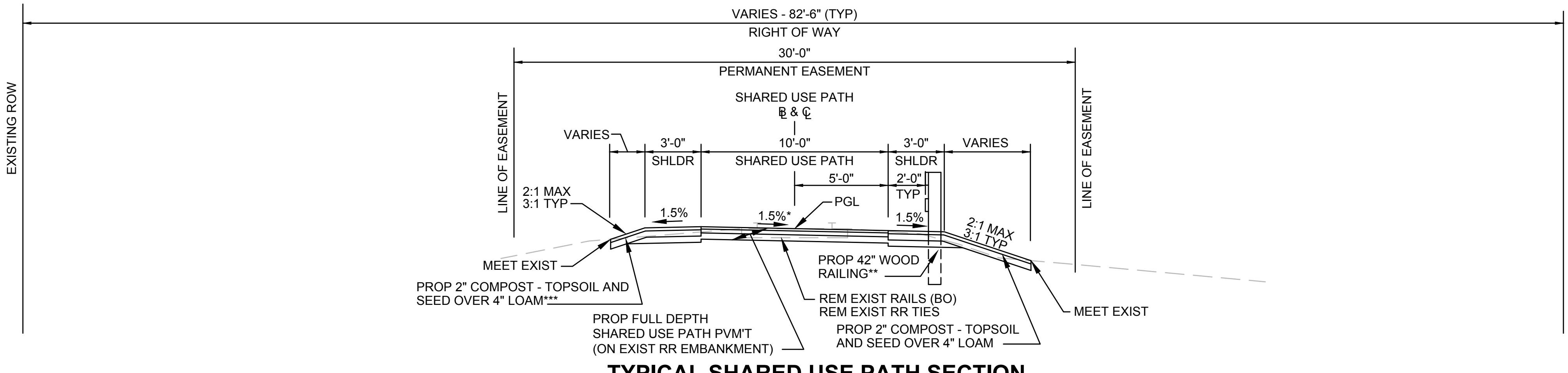




TYPICAL SHARED USE PATH SECTION

STA 242+00± TO STA 243+75±
FULL WIDTH NORTH OF TRACK

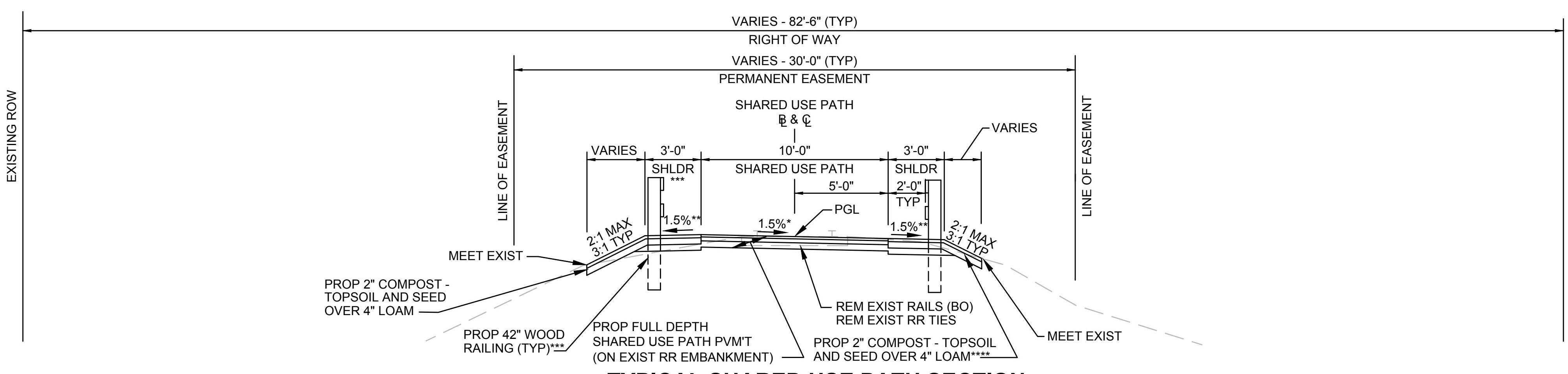
* 0.5% TOLERANCE FOR CONSTRUCTION
** SLOPE SEED MIX B1 SHALL BE USED ON ALL
SLOPES 3:1 AND STEEPER



TYPICAL SHARED USE PATH SECTION

STA 243+75± TO STA 250+25±
STA 266+75± TO STA 275+30±
STA 279+50± TO STA 282+50±
FULL WIDTH ON TRACK

* 0.5% TOLERANCE FOR CONSTRUCTION
** PROP WOOD RAILING RT STA 279+40 TO 279+75, 281+88 TO 282+63
*** SLOPE SEED MIX B1 SHALL BE USED ON ALL
SLOPES 3:1 AND STEEPER



TYPICAL SHARED USE PATH SECTION

STA 250+25± TO STA 258+75±
STA 263+00± TO STA 266+75±
FULL WIDTH ON TRACK

* 0.5% TOLERANCE FOR CONSTRUCTION
** 6:1 SLOPED SHOULDER STA 255+70 TO 257+10 LT/RT, 264+80 TO 265+15 RT
*** PROP WOOD RAILING RT STA 252+65 TO 256+50, 264+00 TO 265+80
PROP WOOD RAILING LT STA 250+50 TO 258+25, 262+75 TO 268+70
**** SLOPE SEED MIX B1 SHALL BE USED ON ALL
SLOPES 3:1 AND STEEPER

PAVEMENT NOTES

PROPOSED FULL DEPTH SHARED USE PATH (SUP) PAVEMENT (ON EXISTING RAILROAD EMBANKMENT)

SURFACE: 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
BASE: 2.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
SUBBASE: 4" GRAVEL BORROW, TYPE b

PROPOSED FULL DEPTH SHARED USE PATH PAVEMENT (OFF EXISTING RAILROAD EMBANKMENT)

SURFACE: 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
BASE: 2.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
SUBBASE: 12" GRAVEL BORROW, TYPE b

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
2.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
BASE: 4.0" SUPERPAVE BASE COURSE 37.5 (SBC-37.5)
SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER
8" GRAVEL BORROW, TYPE b

PROPOSED FULL DEPTH PAVEMENT (LESS THAN 4.0" WIDE)

SURFACE: 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
2.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
BASE: 8" HIGH EARLY STRENGTH CEMENT
CONCRETE BASE COURSE
SUBBASE: 8" GRAVEL BORROW, TYPE b

PROPOSED PAVEMENT MILLING AND OVERLAY

SURFACE: 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
1.5" MAXIMUM PAVEMENT MICROMILLING

LEVELING COURSE: VARIABLE DEPTH (1" MIN) SUPERPAVE LEVELING COURSE 9.5 (SLC-9.5)
ASPHALT EMULSION FOR TACK COAT AT 0.07 GAL/SY

PROPOSED HOT MIX ASPHALT DRIVEWAY

SURFACE: 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
2.0" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5)
FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED HOT MIX ASPHALT WALK/RAISED MEDIAN

SURFACE: 1.0" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
1.5" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5)
FOUNDATION: 8" GRAVEL BORROW, TYPE b

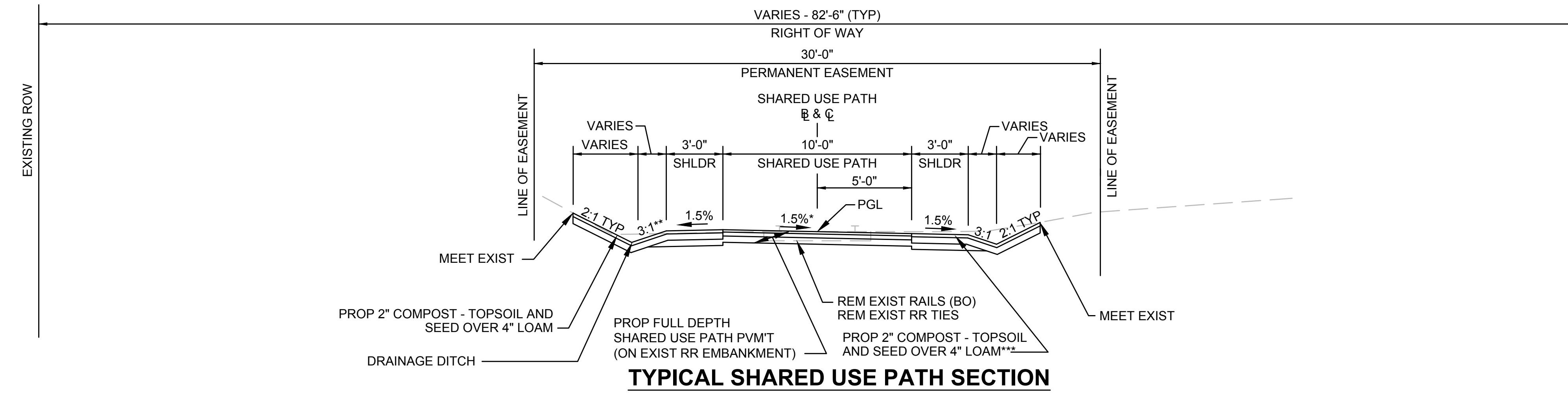
PROPOSED CEMENT CONCRETE WHEELCHAIR RAMP/ISLAND/WALK

SURFACE: 4" CEMENT CONCRETE
AIR ENTRAINED 4000 PSI, 3/4", 610
FOUNDATION: 8" GRAVEL BORROW, TYPE b

PAVEMENT NOTES:

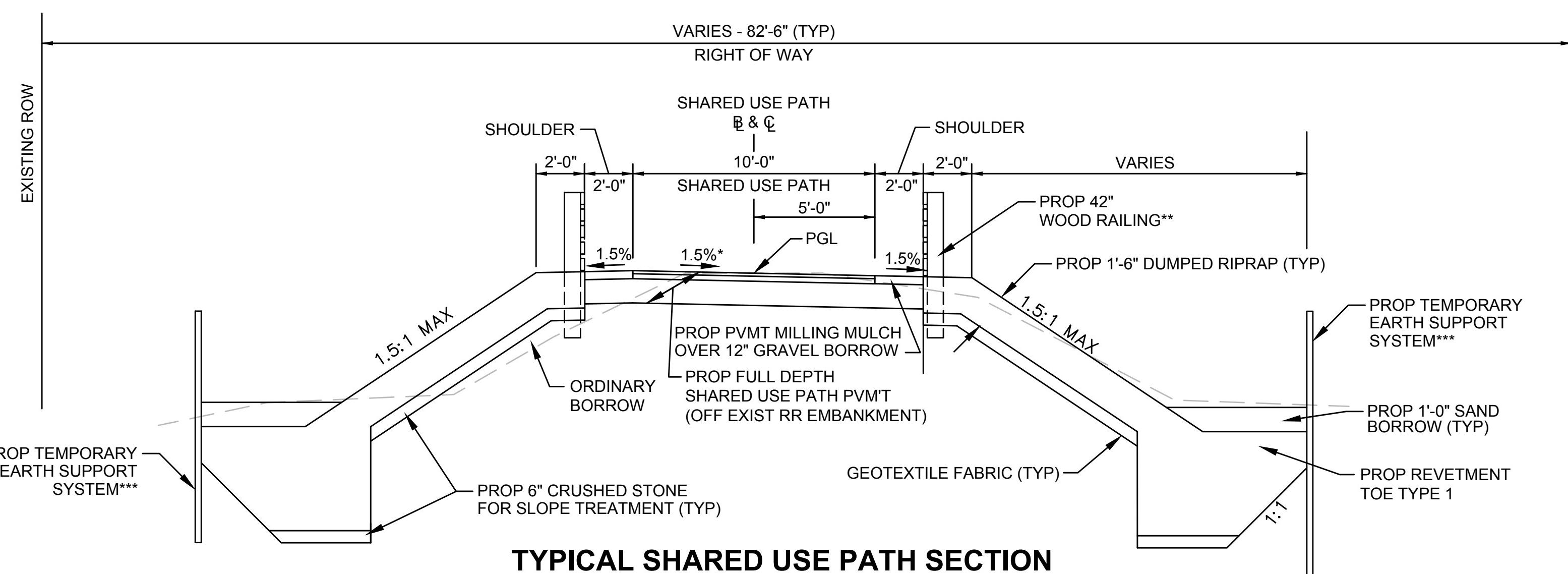
1. ALL SUPERPAVE HOT MIX ASHALT SHALL BE A WARM MIX ASPHALT TECHNOLOGY.
2. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT 0.07 GALLONS PER SQUARE YARD TO MILLED SURFACES AND 0.05 GALLONS PER SQUARE YARD TO SMOOTH SURFACES PRIOR TO PAVING. HMA JOINT SEALANT SHALL BE APPLIED TO COLD JOINTS PRIOR TO PAVING.

TYPICAL SECTIONS & PAVEMENT NOTES

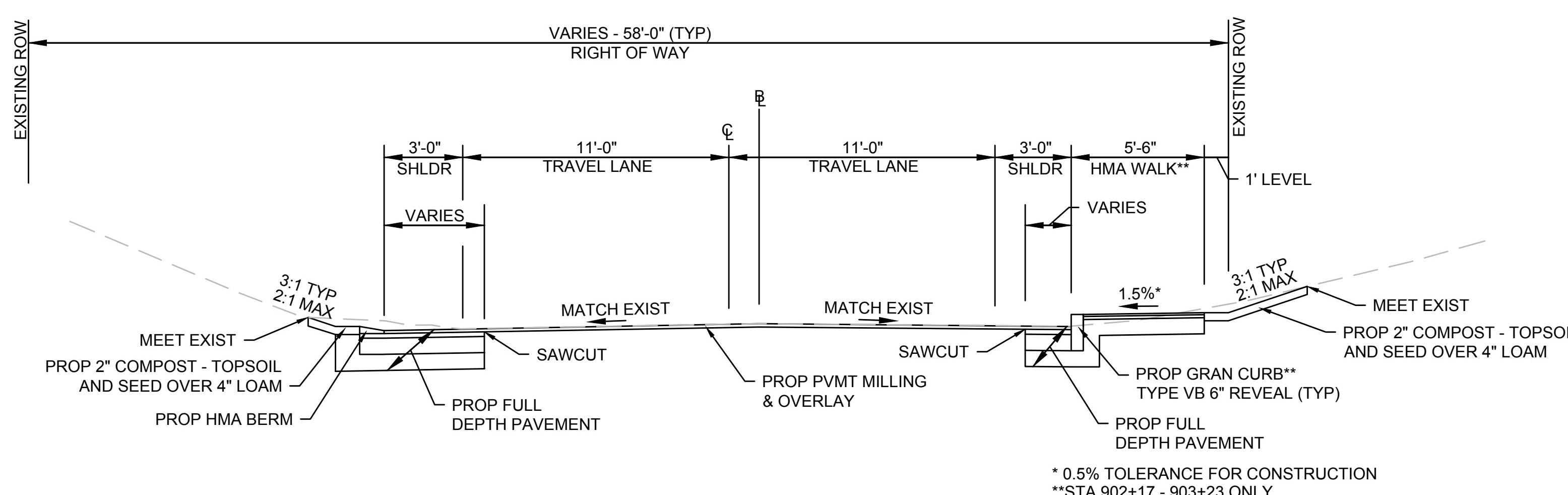
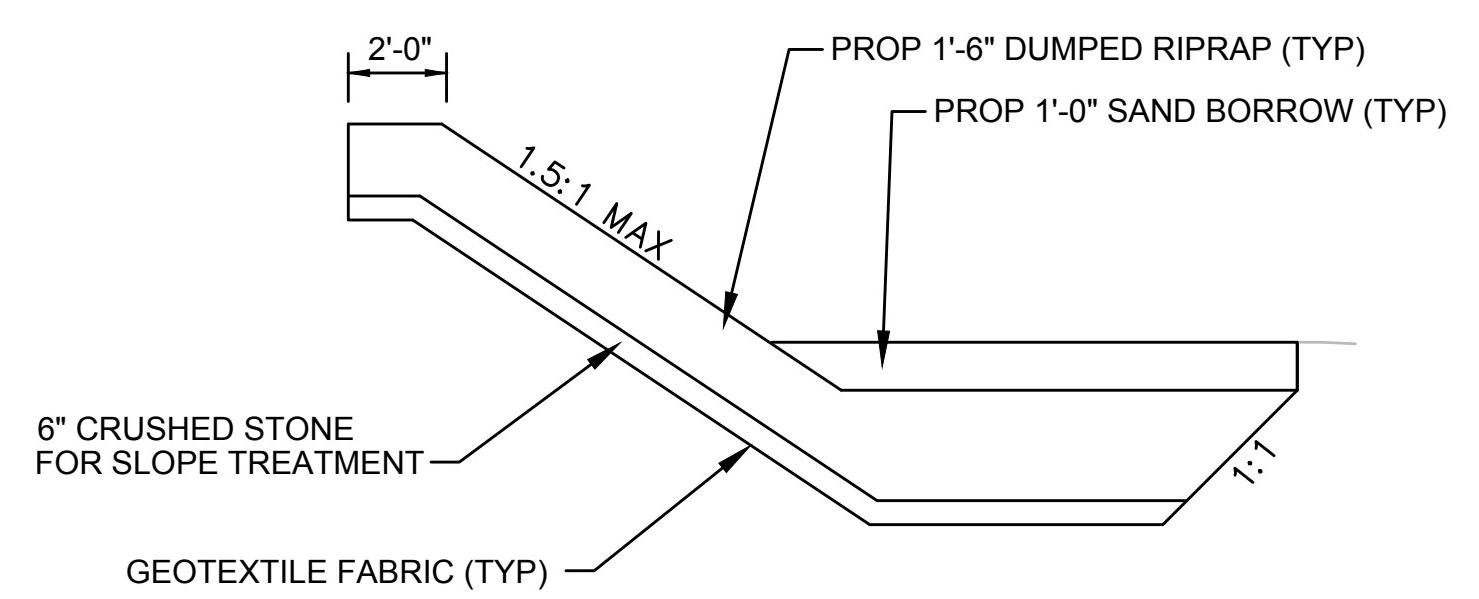


* 0.5% TOLERANCE FOR CONSTRUCTION
** 6:1 SLOPE STA 282+50± TO STA 286+00 LT
*** SLOPE SEED MIX B1 SHALL BE USED ON ALL SLOPES 3:1 AND STEEPER

SEE SHEET 4 FOR PAVEMENT NOTES



* 0.5% TOLERANCE FOR CONSTRUCTION
** PROP WOOD RAILING RT STA 274+75 TO 277+26, 279+03 TO 279+10
PROP WOOD RAILING LT STA 274+75 TO 277+26, 279+03 TO 279+63
*** STA 275+67± TO STA 277+07±, LT
STA 275+94± TO STA 277+07±, RT



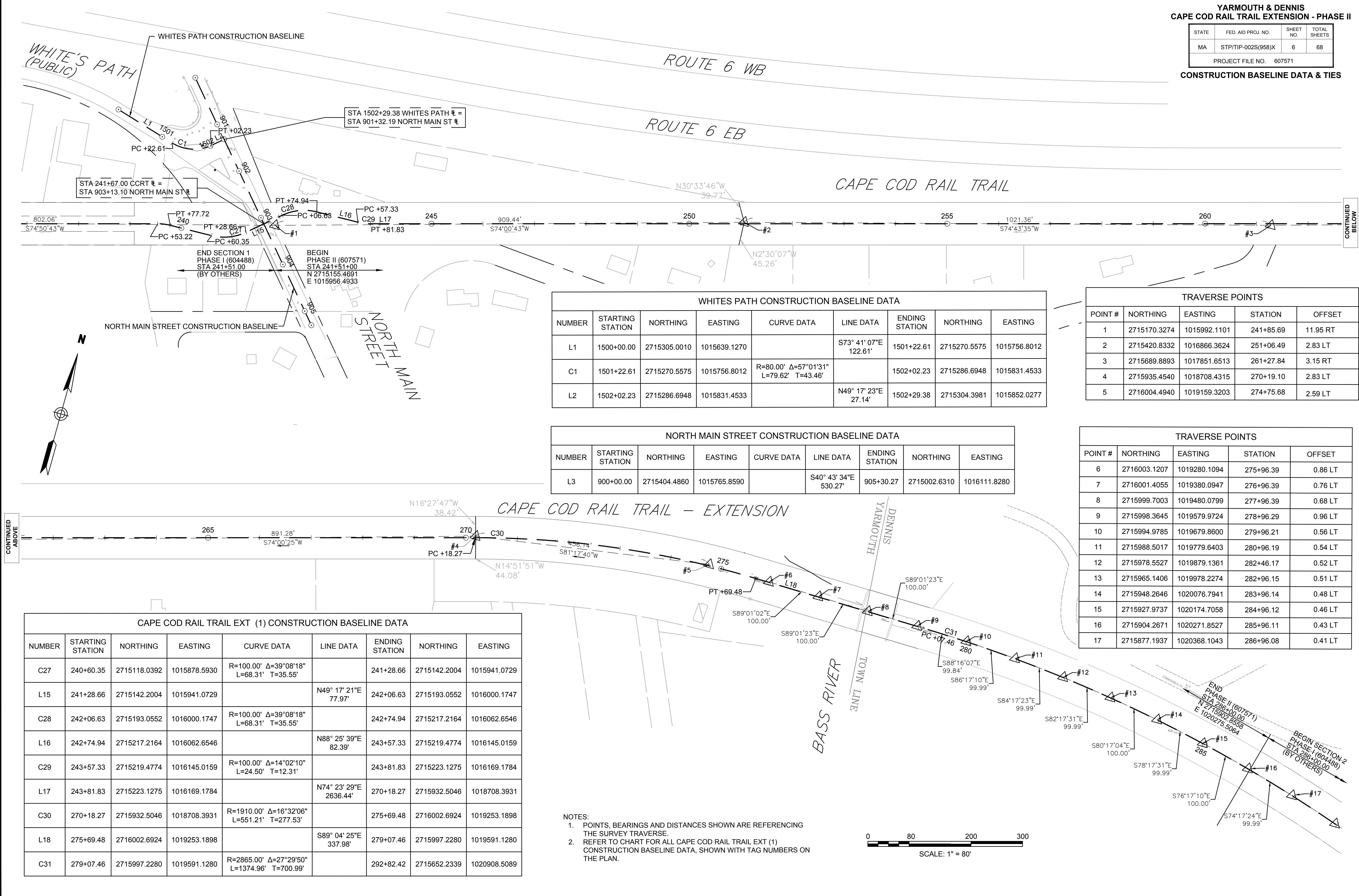
* 0.5% TOLERANCE FOR CONSTRUCTION
**STA 902+17 - 903+23 ONLY
STA 903+23 - 904+88 HMA BERM & LOAM & SEED ONLY

YARMOUTH & DENNIS
CAPE COD RAIL TRAIL EXTENSION - PHASE II

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	6	68
PROJECT FILE NO. 607571			

CONSTRUCTION BASELINE DATA & TIES

607571HD (ALGN)DWG Plotted on 25-Aug-2016 1:09PM



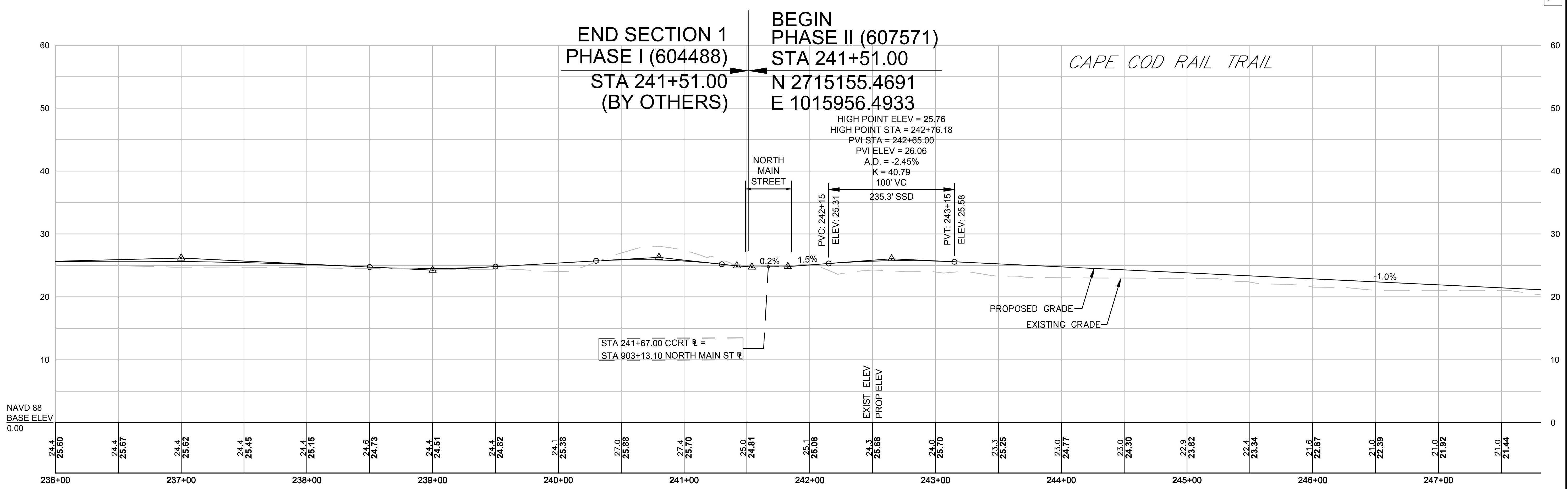
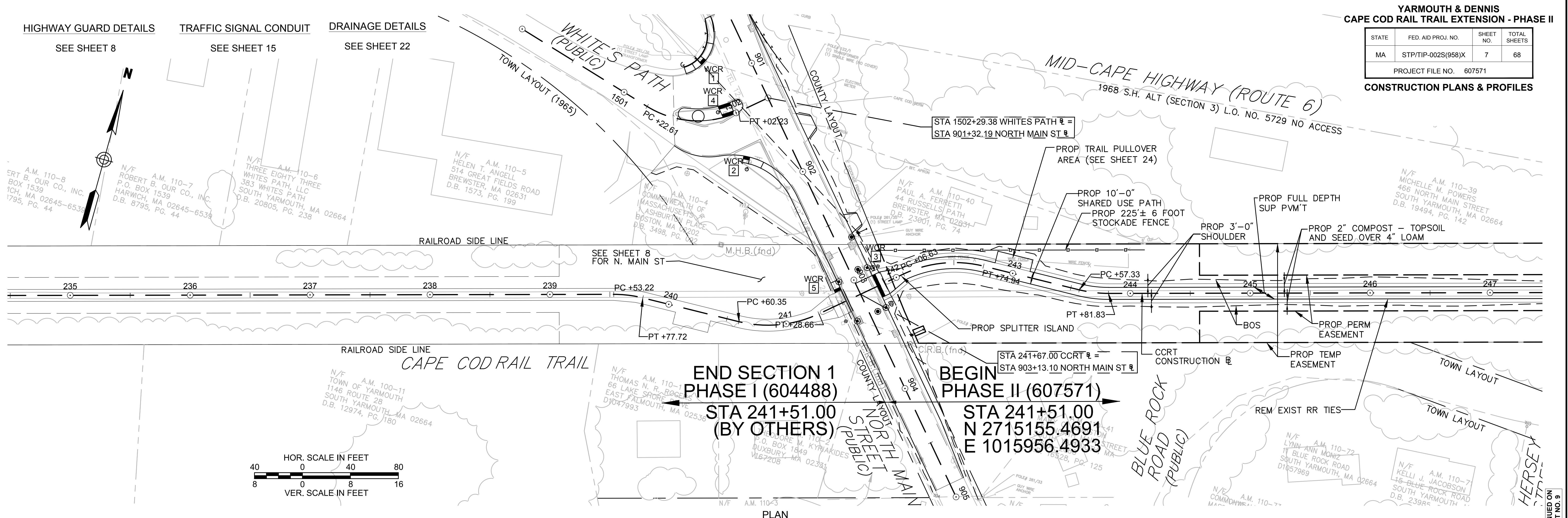
**YARMOUTH & DENNIS
CAPE COD RAIL TRAIL EXTENSION - PHASE II**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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PROJECT FILE NO. 607571			

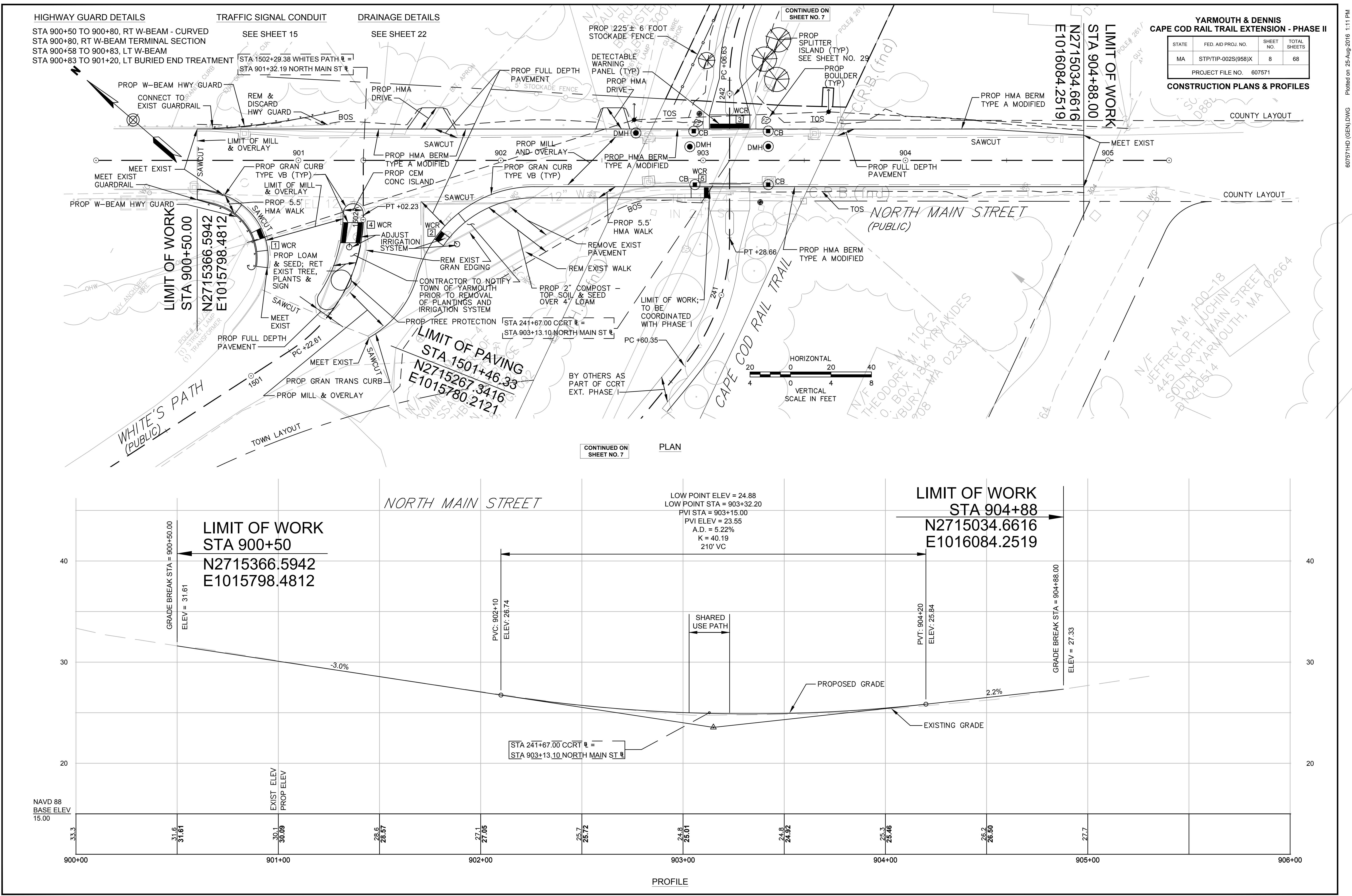
CONSTRUCTION PLANS & PROFILES

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607571HD (GEN) DWG



PROFILE



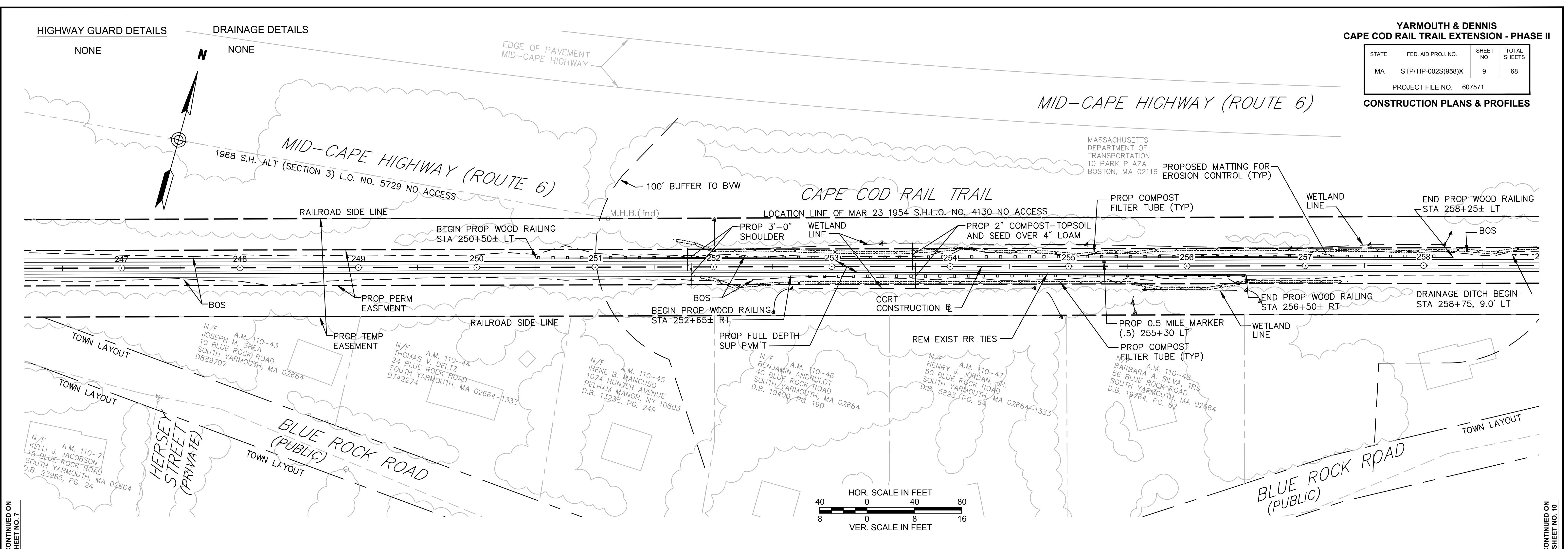
**YARMOUTH & DENNIS
CAPE COD RAIL TRAIL EXTENSION - PHASE II**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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PROJECT FILE NO. 607571			

CONSTRUCTION PLANS & PROFILES

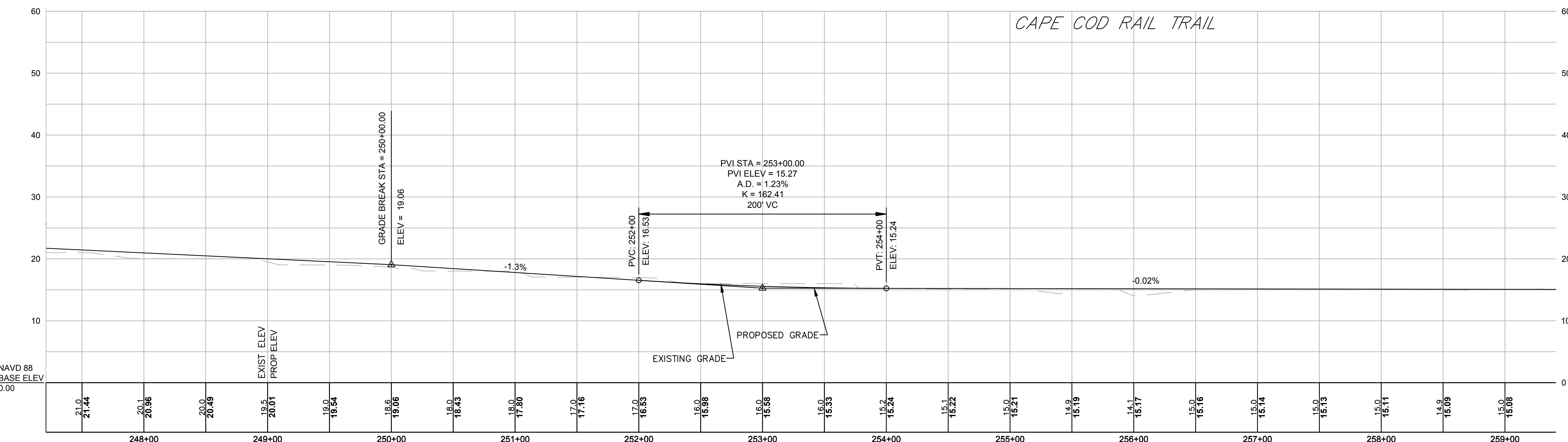
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SHEET NO. 7

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SHEET NO. 10

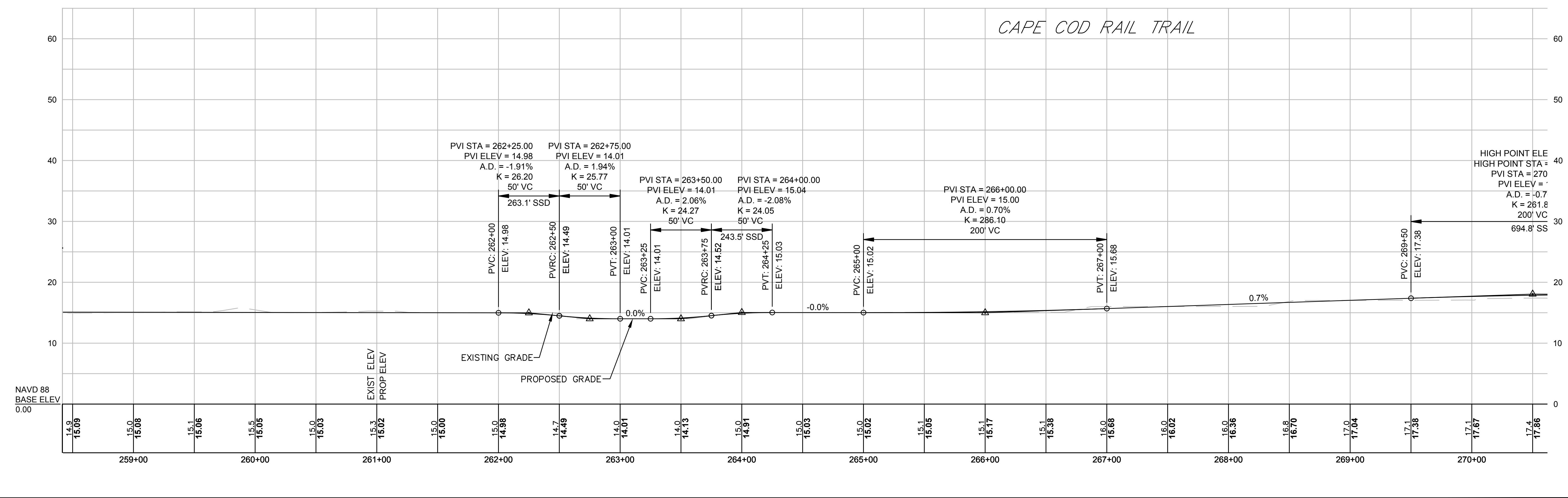
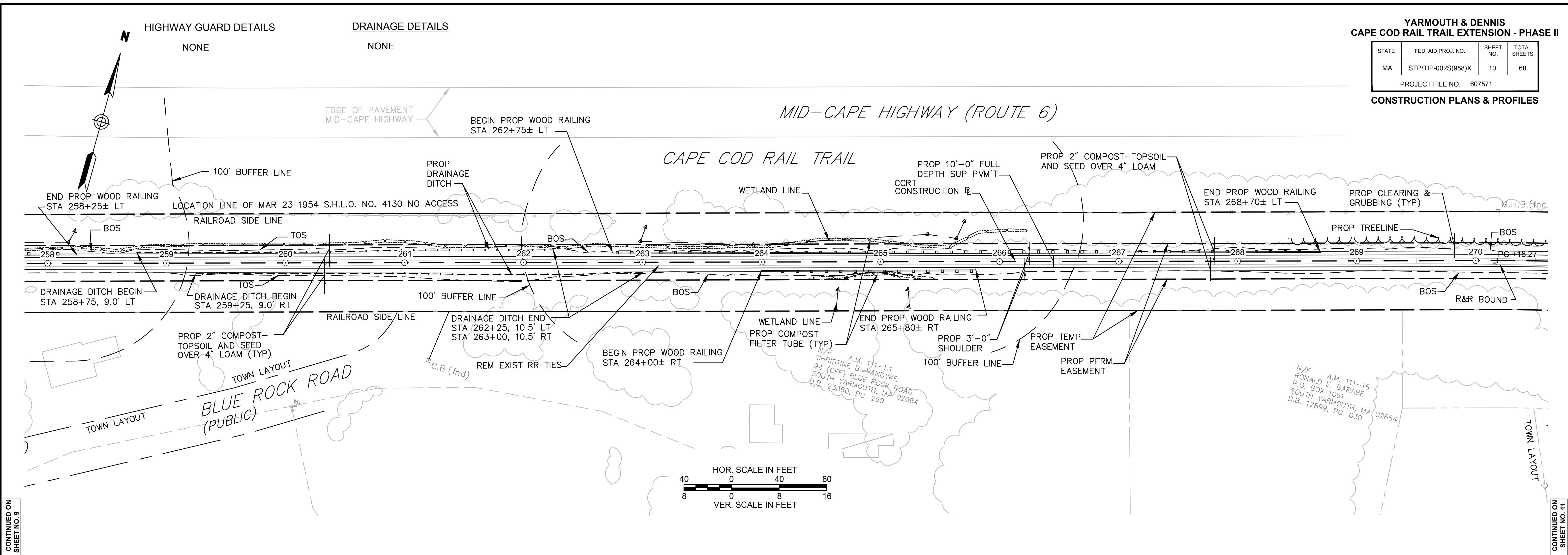


**YARMOUTH & DENNIS
CAPE COD RAIL TRAIL EXTENSION - PHASE II**

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MA	STP/TIP-002S(958)X	10	68
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CONSTRUCTION PLANS & PROFILES

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607571HD (GEN) DWG

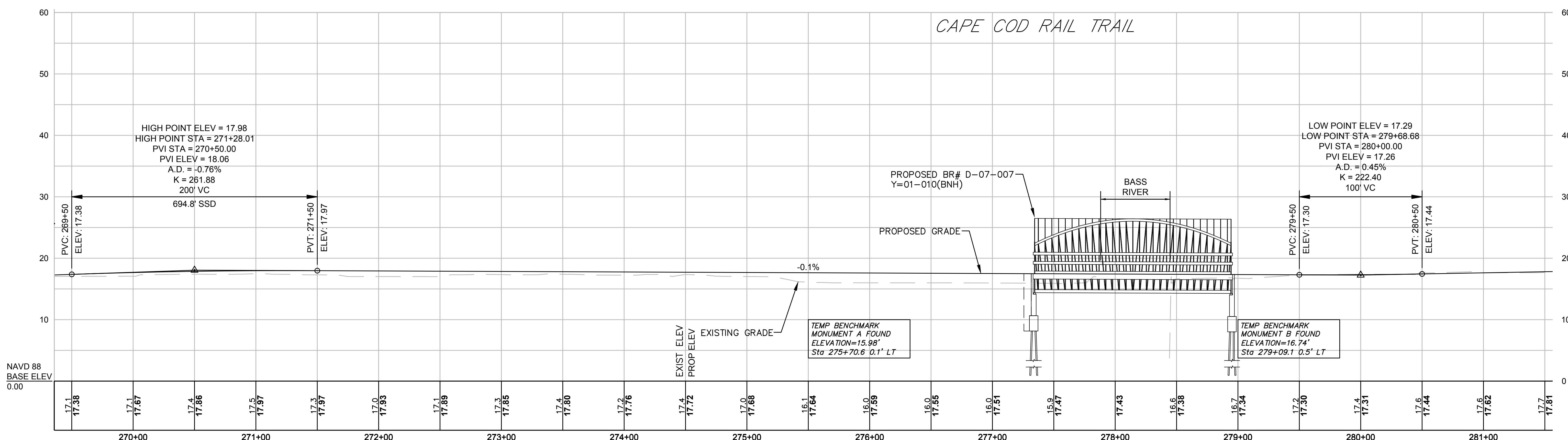
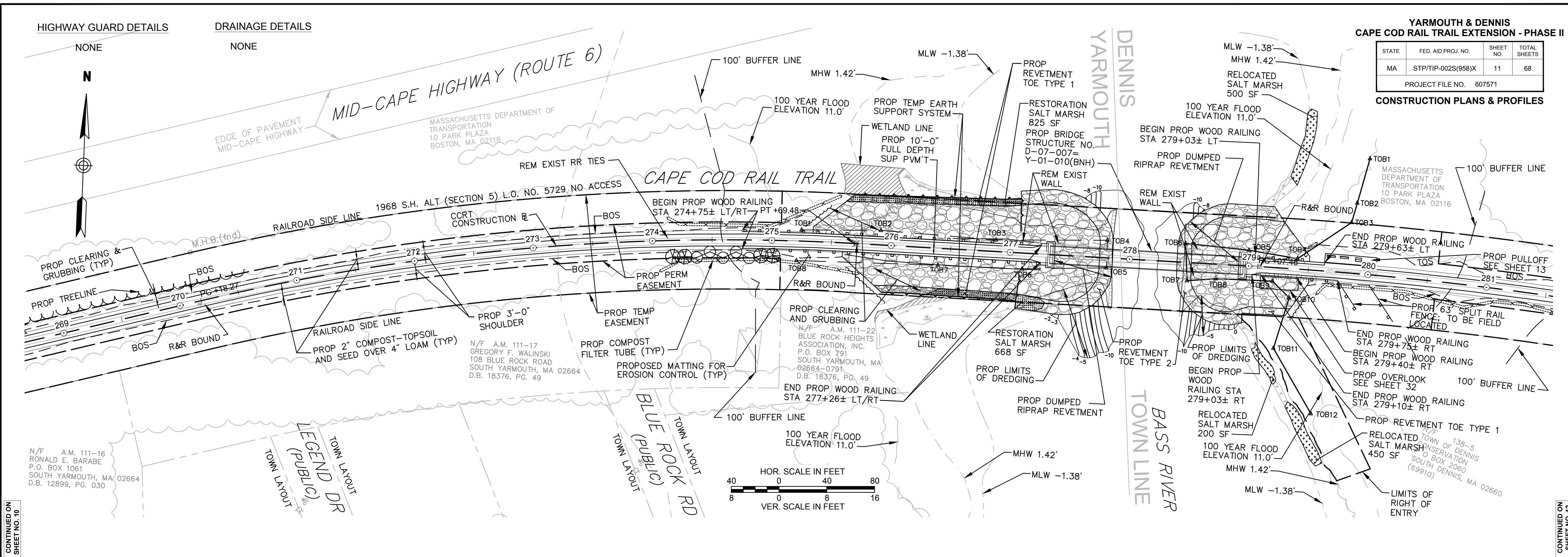


**YARMOUTH & DENNIS
CAPE COD RAIL TRAIL EXTENSION - PHASE II**

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MA	STP/TIP-002S(958)X	11	68
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CONSTRUCTION PLANS & PROFILES

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607571HD (GEN).DWG



YARMOUTH & DENNIS CAPE COD RAIL TRAIL EXTENSION - PHASE II

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	12	68
PROJECT FILE NO. 607571			

CONSTRUCTION PLANS & PROFILES

**BEGIN SECTION 2
PHASE I (604488)
STA 286+00.00**

(BY OTHERS)

N/F 148-19
DONNA M ZAYATZ
17 SOUTHOVER
SOUTH DENNIS, MA 02660
(183200)

NATION

HIGHWAY GUARD DETAILS

NONE

DRAINAGE DETAILS

NONE

END PHASE II (607)
STA 286+00.0
N 2715902.85
E 1020275.50

MASS DEPT TRAN 10 P BOST

SACHUSETTS DEPARTMENT OF TRANSPORTATION, PARK PLAZA, BOSTON, MA 02116

100' BUFFER LINE

PROP MILE MARKER (DEN. 1) 281+70, RT

DRAINAGE DITCH BEGIN STA 285+89, 11.3' LT STA 282+75, 9.5' RT

TOS PROD DRAINAGE DITCH (TYP)
PROD 2" COMPOST-TOPSOIL AND SEED OVER 4" LOAM

PROPOSED MATTING FOR EROSION CONTROL (TYP)

CCRT CONSTRUCTION B

REM EXIST R

285

284

283

282

281 BOS

280

TOS

BOS PROD 63' SPLIT RAIL FENCE; TO BE FIELD LOCATED

100' BUFFER LINE

PROD TEMP EASEMENT

BEGIN PROD WOOD RAILING STA 281+88± RT TO STA 282+63± RT BVW-3

PROD PERM EASEMENT

TOS

PROD 3'-0" SHOULDER

100' BUFFER LINE

PROD COMPOST FILTER TUBE (TYP)

PROD DRAINAGE DITCH

BVW-1

wetland

BVW-2

BVW-3

BVW-4

BVW-5

BVW-6

BVW-7

BVW-8

BVW-9

wetland

TOB12

N/F 138-5 TOWN OF DENNIS CONSERVATION P O BOX 2060 SOUTH DENNIS, MA 02660 (69910)

HOR. SCALE IN FEET

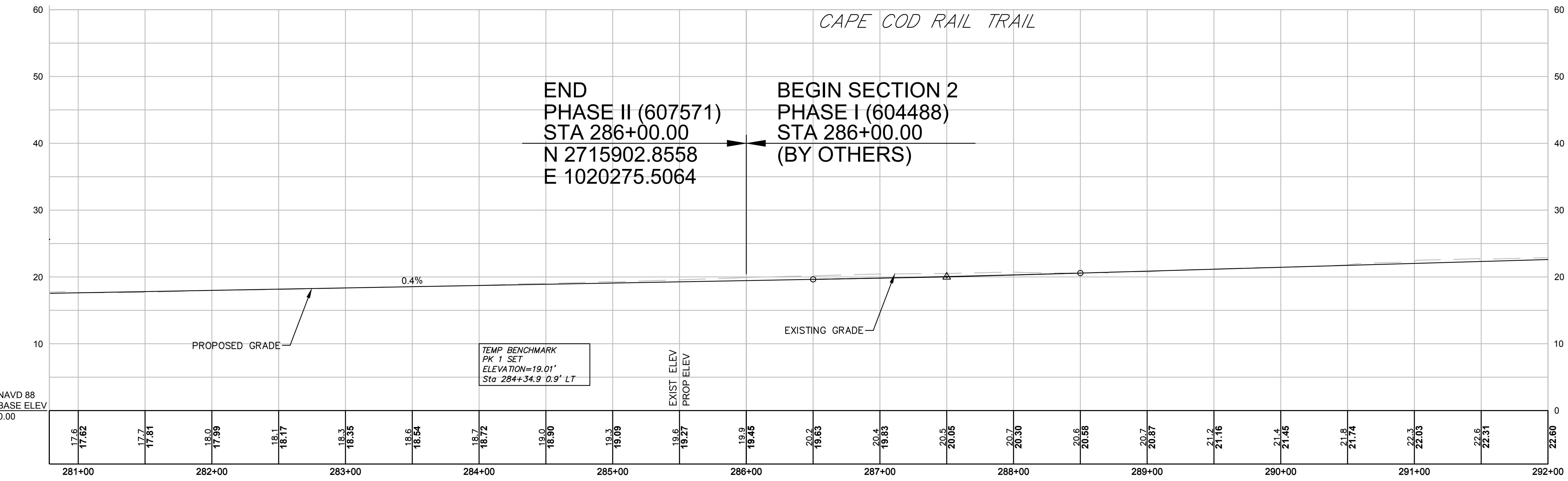
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8 0 8 16

VER. SCALE IN FEET

ED ON 0.11

**CONTINUED ON
SHEET NO. 11**

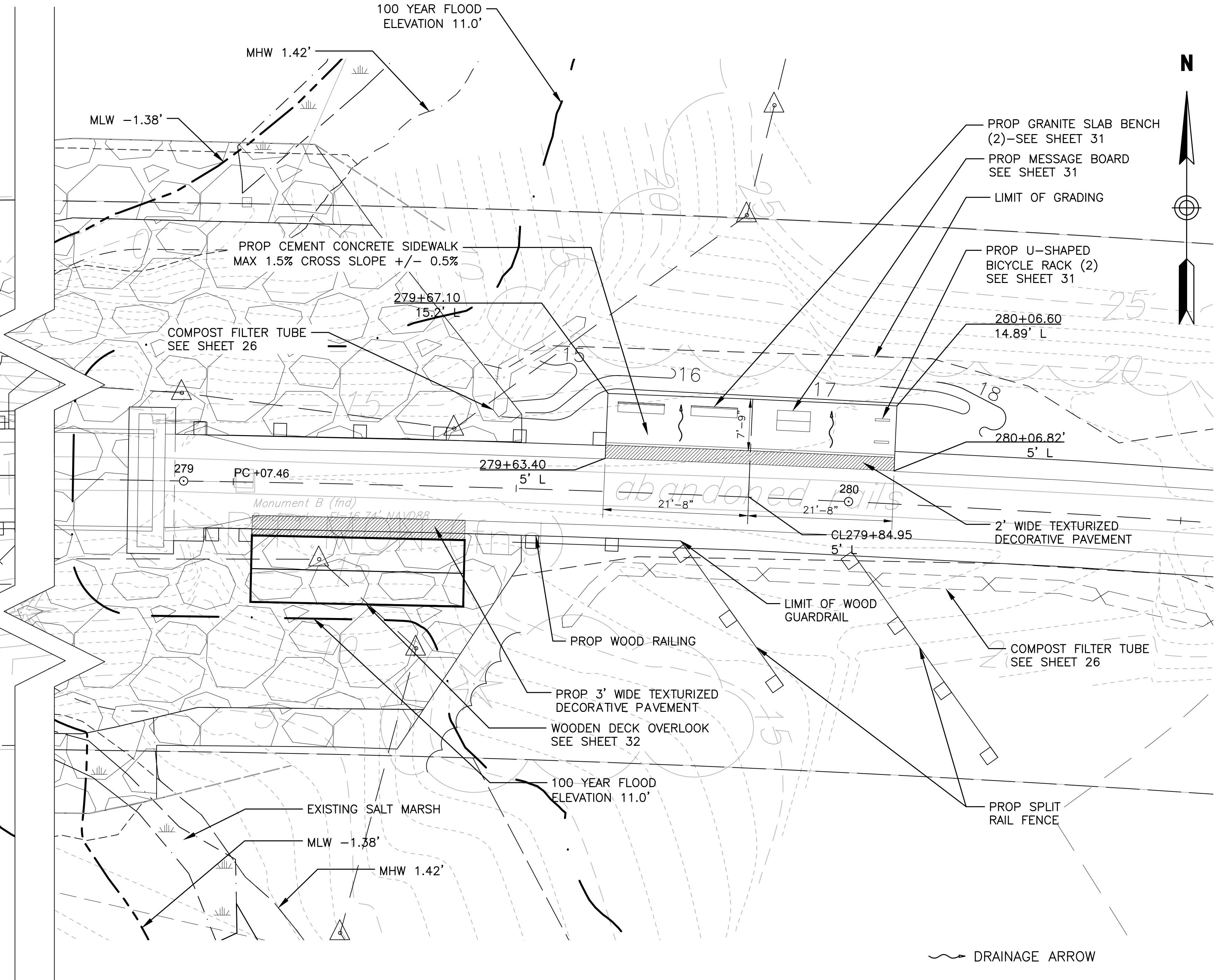
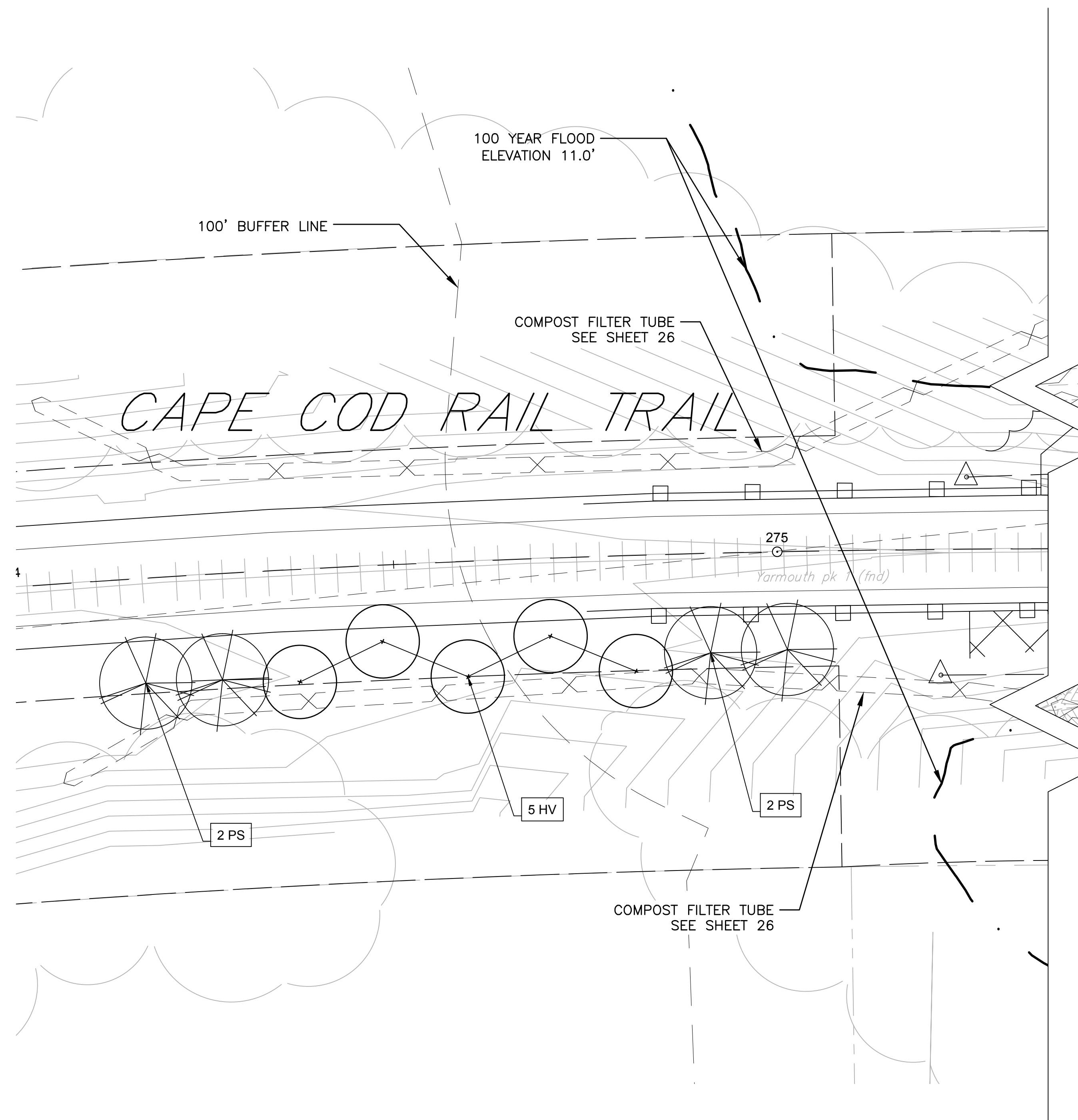


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MA	STP/TIP-002S(958)X	13	68
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**CONSTRUCTION PLAN - ENLARGEMENT
BASS RIVER REST AREA**

MASTER PLANT SUMMARY LIST						
QTY.	KEY	BOTANICAL NAME	COMMON NAME	UNIT.	SIZE	SPACING
EVERGREEN TREES						
4	PS	PINUS STROBUS	PINE WHITE	EA	5-6' H	10 FT O.C.
SHADE TREES						
5	HV	HAMAMELIS VIRGINIANA	WITCH HAZEL SPRING BLOOMING	EA	6-7' HTL	12 FT O.C.



**YARMOUTH & DENNIS
APE COD RAIL TRAIL EXTENSION - PHASE I**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	14	68

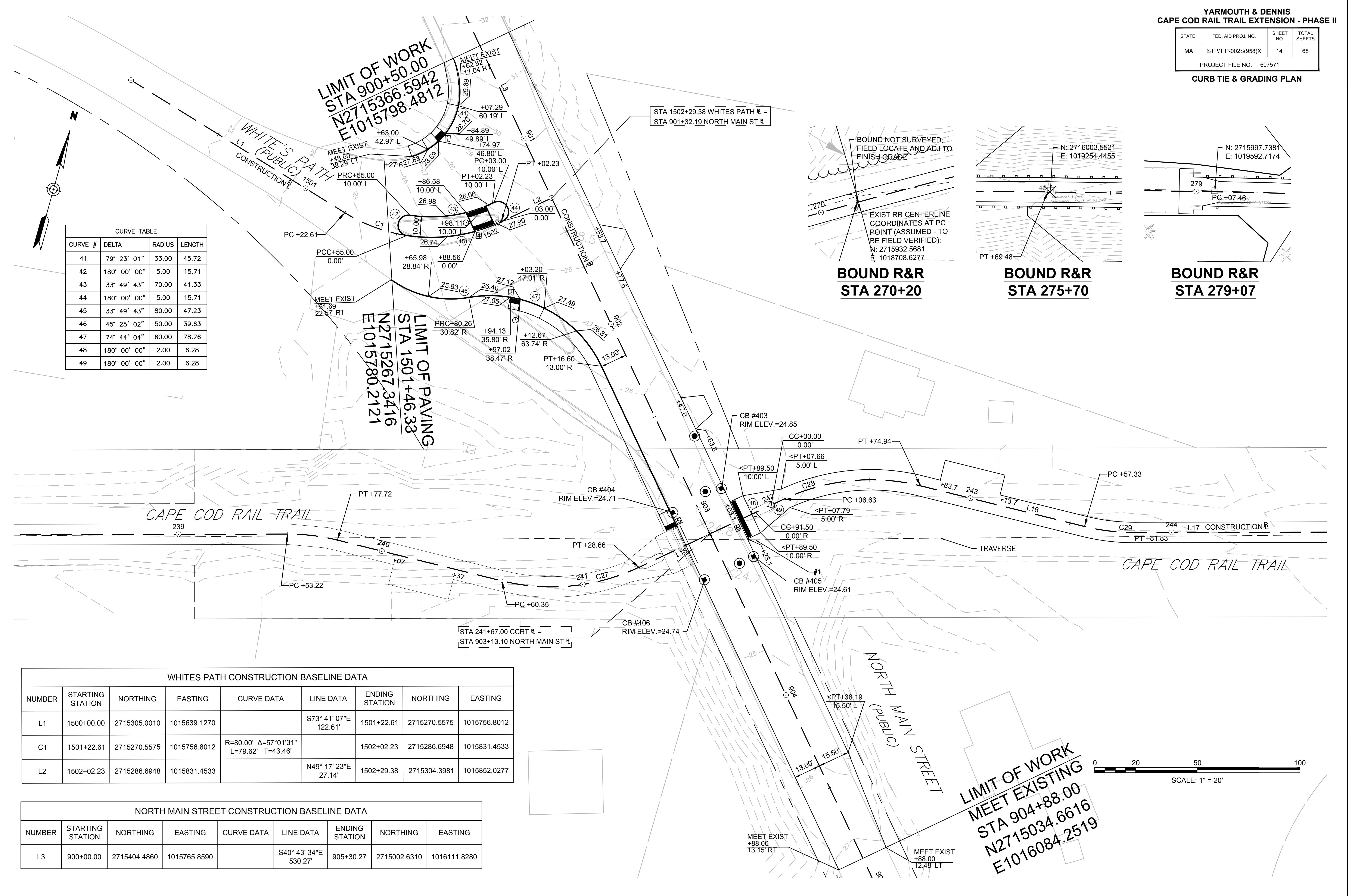
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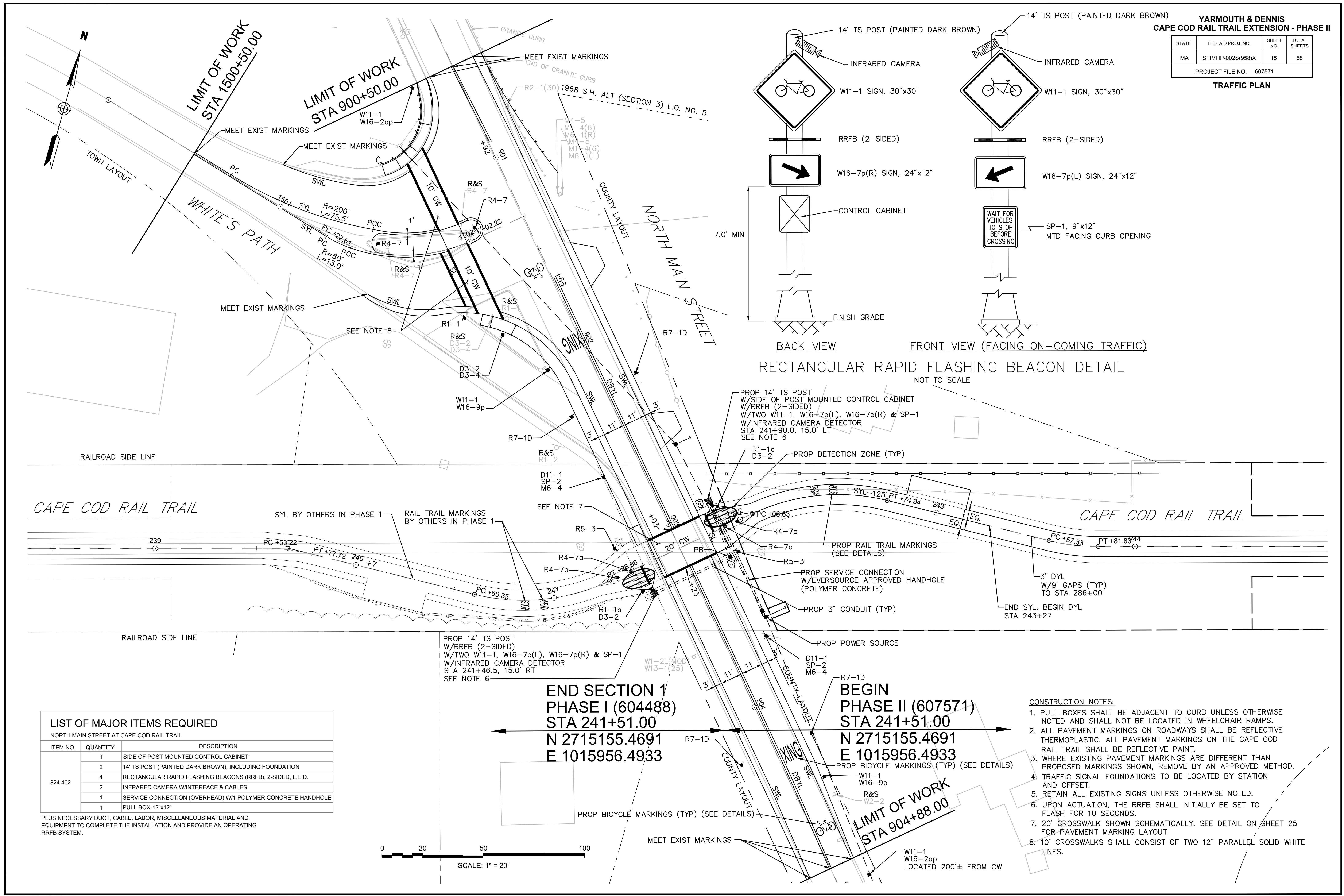
CURB TIE & GRADING PLAN

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CURB TIE & GRADING PLAN

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CAPE COD RAIL TRAIL EXTENSION - PHASE II

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	16	68

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TRAFFIC SIGN SUMMARY SHEET

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R1-1	30"	30"		SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			1	RED	WHITE	WHITE	P5-1	5.18	5.18
R1-1a	18"	18"					2	RED	WHITE	WHITE	2 MTD W/OTHERS	1.86	3.72
R4-7	24"	30"					2	WHITE	BLACK	BLACK	P5-2	5.00	10.00
R4-7a	18"	24"					4	WHITE	BLACK	BLACK	P5-4	3.00	12.00
R5-3	24"	24"					2	WHITE	BLACK	BLACK	P5-2	4.00	8.00
R7-1D	12"	18"					4	WHITE	RED	RED	P5-4	1.50	6.00
M6-4	21"	15"					2	GREEN	WHITE	WHITE	2 MTD W/OTHERS	2.19	4.38
W11-1	30"	30"					8	YELLOW	BLACK	BLACK	P5-4 4 MTD ON TS POST	6.25	50.00
W16-2ap	24"	12"					2	YELLOW	BLACK	BLACK	2 MTD W/OTHERS	2.00	4.00
W16-7p(L)	24"	12"					2	YELLOW	BLACK	BLACK	2 MTD ON TS POST	2.00	4.00
W16-7p(R)	24"	12"					2	YELLOW	BLACK	BLACK	2 MTD ON TS POST	2.00	4.00
W16-9p	24"	12"					2	YELLOW	BLACK	BLACK	2 MTD W/OTHERS	2.00	4.00
D11-1	24"	18"					2	GREEN	WHITE	WHITE	P5-2	3.00	6.00
D3-2	48"	12"		6/4	3 3	N/A	3	GREEN	WHITE	WHITE	P5-3	INCLUDED UNDER ITEM 874	
D3-4	42"	12"		6/4	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/OTHERS	INCLUDED UNDER ITEM 874	
SP-1	9"	12"		1"C 1"C 1"C 1"C 1"C 1.5"		N/A	2	YELLOW	BLACK	BLACK	2 MTD ON TS POLE	0.75	1.50
SP-2	18"	12"		4"D	4" 4"	N/A	2	GREEN	WHITE	WHITE	2 MTD W/OTHERS	1.50	3.00

NOTE: HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, FOR VERTICAL & LATERAL CLEARANCES.

TEMPORARY TRAFFIC CONTROL PLAN GENERAL NOTES

- ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED, THE MASSDOT STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TEMPORARY TRAFFIC CONTROL PLANS, THE LATEST REVISIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, (AASHTO) ROADSIDE DESIGN GUIDE, AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, AND NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWIRE (MASH).
- NO WORK SHALL OCCUR WITHIN THE PUBLIC WAY ON TOWN RECOGNIZED HOLIDAYS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- WORK SHALL NOT AFFECT TRAFFIC PATTERNS DURING PEAK TRAFFIC PERIODS. PEAK TRAFFIC PERIODS ARE DEFINED AS MONDAY THRU FRIDAY 6:00AM-9:00AM AND 3:00PM-6:00PM.
- ALL DRUMS SHALL BE SET AT 20' ON CENTER MAX. ON LOCAL ROADWAY. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
- ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.
- THE CONTRACTOR SHALL NOTIFY EACH ABUTTOR AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS.
- FOR RESTORATIVE WORK ON LOCAL ROADWAYS, A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON TWO WAY STREETS SHALL BE MAINTAINED AT ALL TIMES, EXCEPT THAT DURING WORKING HOURS, TRAFFIC MAY BE REDUCED TO ONE LANE UNDER POLICE CONTROL FOR SHORT TIME PERIODS WHEN REQUIRED FOR THE WORK, AS SHOWN UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- FOR DROP-OFFS 4" OR LESS, CONDITION MAY BE MITIGATED WITH W8-9 (LOW SHOULDER) SIGN OR TEMPORARY CHANNELIZATION DEVICES. FOR DROP-OFFS GREATER THAN 4" BUT NO MORE THAN 12", DETERMINE WHETHER IT IS MORE COST EFFECTIVE TO INSTALL BOTH TEMPORARY CHANNELIZATION DEVICES AND A 1V:4H (MIN) TO 1V:6H (DESIRED) WEDGE OR TO SHIELD IT. FOR DROP-OFFS GREATER THAN 12" BUT NO MORE THAN 24", DETERMINE WHETHER IT IS MORE COST EFFECTIVE TO MAINTAIN AN ADDITIONAL 5' OF SHOULDER WIDTH AND INSTALL BOTH TEMPORARY CHANNELIZATION DEVICES AND A 1V:6H (DESIRED) WEDGE OR TO SHIELD IT. FOR DROP-OFFS 24" OR GREATER USE BARRIER IN ACCORDANCE WITH MASSDOT WORK ZONE POSITIVE PROTECTION GUIDELINES.
- 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED.
- NON-ESSENTIAL TRAFFIC CONTROL DEVICES AND SIGNS SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS WHEN NOT IN USE.
- ADVISORY SPEED PLATES (W13-1P) SHALL BE USED AS SHOWN AND AS REQUESTED BY THE ENGINEER. POSTED ADVISORY SPEED SHALL BE AS APPROVED BY THE APPROPRIATE AGENCY WITH JURISDICTION OVER THE ROADWAY ON WHICH THE SIGN WILL BE MOUNTED.
- SIGNS INSTALLED ON PORTABLE STANDS REQUIRE 12 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
- SIGNS INSTALLED ON PORTABLE STANDS PLACED AMONG CHANNELIZATION DEVICES REQUIRE A 36 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
- SIGNS MOUNTED ON P5 POSTS REQUIRE A MINIMUM 84 INCH MOUNTING HEIGHT FROM THE ROADWAY OR SIDEWALK SURFACE TO THE BOTTOM OF THE SIGN.
- W20-7b SIGNS SHALL BE REPLACED BY W20-7 SIGNS WHEN FLAGGERS ARE USED IN LIEU OF POLICE OFFICER DETAILS.
- REFLECTORIZED CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.
- CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPER AREAS.
- THERE IS NO DESIGNATED BICYCLE LANE ON THE ROADWAY WITHIN THE PROJECT LIMITS. BICYCLES ARE EXPECTED TO SHARE THE ROAD WITH GENERAL VEHICULAR TRAFFIC.
- CONTRACTOR SHALL SECURE WORK AREAS TO PREVENT UNAUTHORIZED ACCESS AT ALL TIMES.
- W20-8a SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF PROPS WHERE UTILITY CASTINGS HAVE BEEN RAISED IN ADVANCE OF PAVING OPERATIONS OR AS REQUESTED BY THE ENGINEER.
- W8-15 SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF PAVEMENT MILLING PROPS OR AS REQUESTED BY THE ENGINEER.
- TEMPORARY MARKINGS SHALL BE WATERBORNE PAINT ON SURFACE-APPLIED REMOVABLE TAPE AS APPROVED BY THE ENGINEER.
- ALL TEMPORARY CROSSWALKS AND STOP LINES SHALL BE 12 INCHES WIDE.
- ALL TEMPORARY DOUBLE YELLOW LINES (DBYL) SHALL BE 6 INCHES WIDE.
- THE FIRST 5 DRUMS ON TAPERS SHALL BE REFLECTORIZED DRUMS WITH TYPE A LIGHTS.
- W20-8a SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF AREAS WHERE UTILITY CASTINGS HAVE BEEN RAISED IN ADVANCE OF PAVING OPERATIONS OR AS REQUESTED BY THE ENGINEER.
- W20-1c OR R2-10a SIGNS SHOWN ON ADVANCE SIGN SCHEMATIC MAY BE USED IN LIEU OF THOSE SIGNS SHOWN ON TYPICAL DETAILS ON THE TEMPORARY TRAFFIC CONTROL PLANS IF MINIMUM SIGN SPACING IS MET.
- WHEN UTILIZING TYPICAL TRAFFIC CONTROL DETAILS OR STAGING SETUPS, COVER EXISTING CONFLICTING ADVANCE WARNING SIGNS AS REQUIRED TO COMPLETE THE WORK.
- CONTRACTOR SHALL NOT INSTALL CROSSWALK MARKINGS ON NORTH MAIN STREET OR WHITE'S PATH UNTIL SUCH TIME AS PHASE 2 CAPE COD RAIL TRAIL CONNECTION IS OPEN FOR USE. CONTRACTOR SHALL RETAIN TYPE 3 BARRICADES AND R9 SERIES SIGNS UNTIL FINAL CROSSWALK MARKINGS ARE INSTALLED.

LEGEND

	FLAGGER
	POLICE OFFICER
●	REFLECTORIZED DRUM
○	REFLECTORIZED DRUM WITH TYPE A FLASHER
■	TEMPORARY CONSTRUCTION SIGN
▲	TRAFFIC CONE
■	TYPE III BARRICADE
■	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
▨	WORK AREA (PUBLIC ACCESS RESTRICTED)
←	TRAFFIC FLOW
→	PEDESTRIAN ROUTE
↔	CONSTRUCTION FENCE
↖ ↗	PEDESTRIAN CHANNELIZATION DEVICE
NTS	NOT TO SCALE

ADVANCE SIGN SPACING

ROAD	DISTANCE BETWEEN SIGNS (FEET)			
	A	B	C	D
N MAIN STREET & WHITES PATH	350	200	350	350

LANE TAPER LENGTH FORMULA

L= TAPER LENGTH IN FEET

W= WIDTH OF ROADWAY TO BE SHIFTED OR REDIRECTED IN FEET

S= POSTED SPEED LIMIT IN MPH

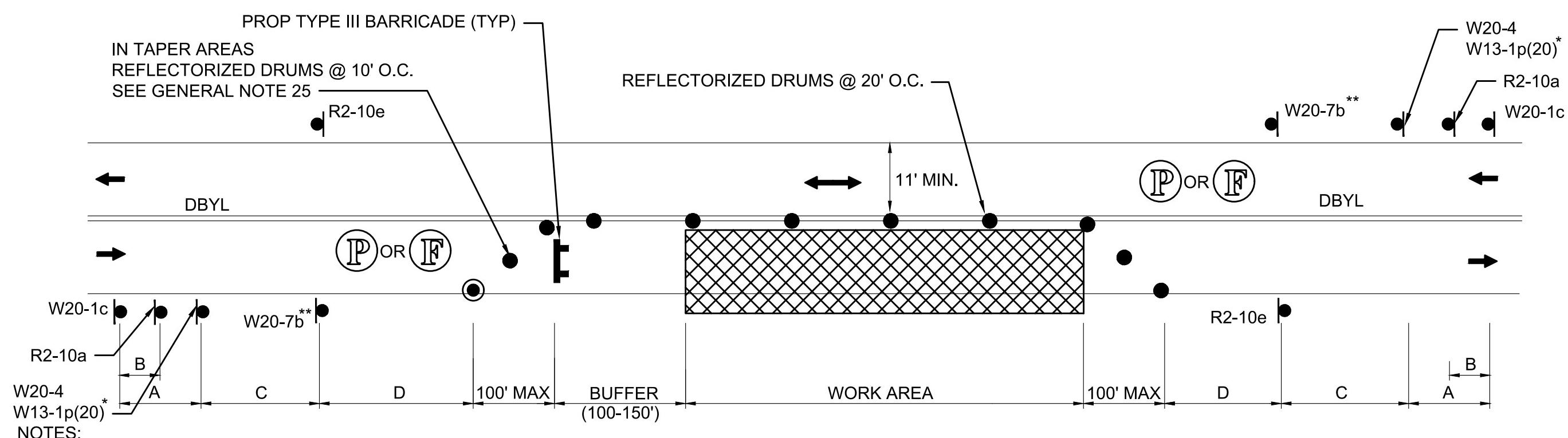
POSTED SPEED 40 MPH OR LESS

$$L = \frac{WS^2}{60}$$

BUFFER SPACING

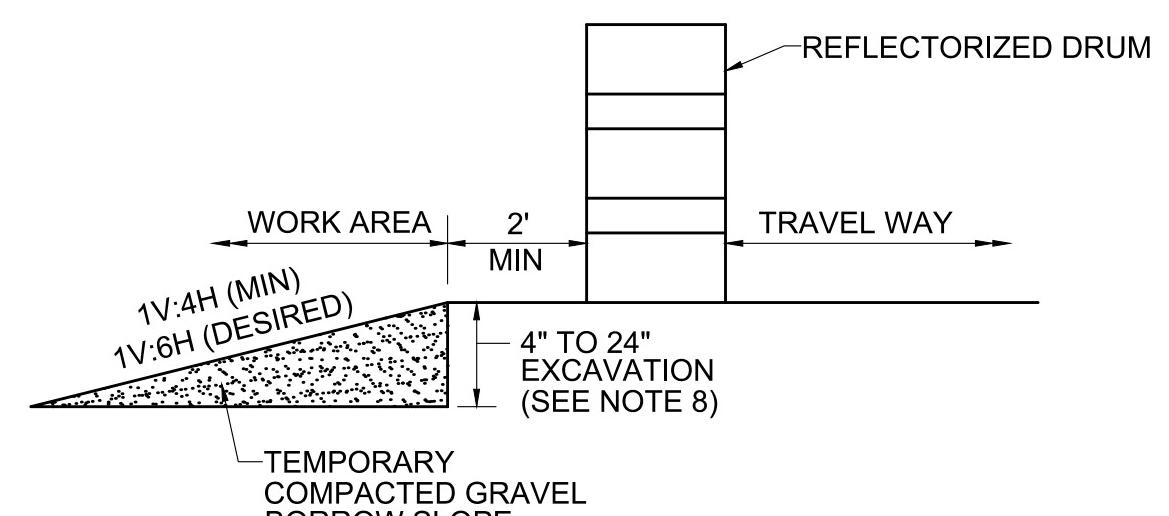
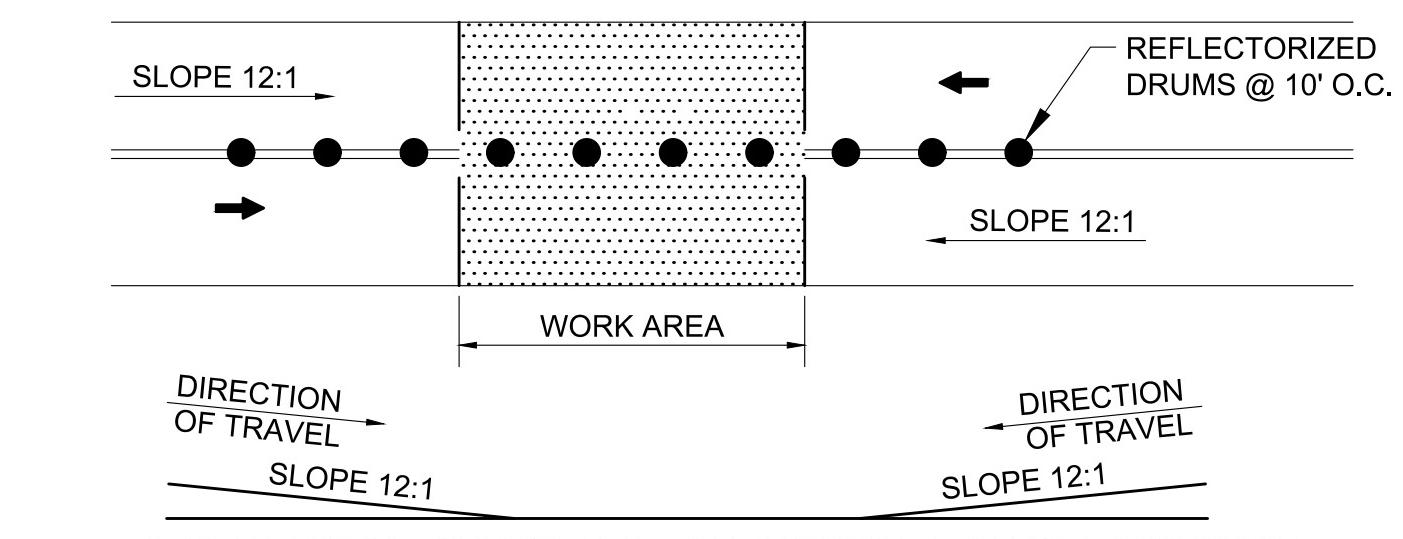
SPEED (MPH)	DISTANCE (FEET)
20	115
25	155
30	200
35	250

LANE CLOSURES SHOWN ARE FOR TEMPORARY CONSTRUCTION.
ALL DRUMS AND SIGNS ARE SHOWN AS THEY SHOULD APPEAR
DURING THE WORKING DAY, OR WHILE OPERATING IN THE WORK ZONE.



TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC

SCALE: NTS



NOTE:
CONTRACTOR SHALL INSTALL W8-9 SIGN ON ALL ROADWAYS 350 FT IN ADVANCE OF THE START OF DROP-OFF CONDITION.

TEMPORARY PAVEMENT TRANSITION DETAIL

SCALE: NTS

TYPICAL ROADWAY DROP-OFF PROTECTION

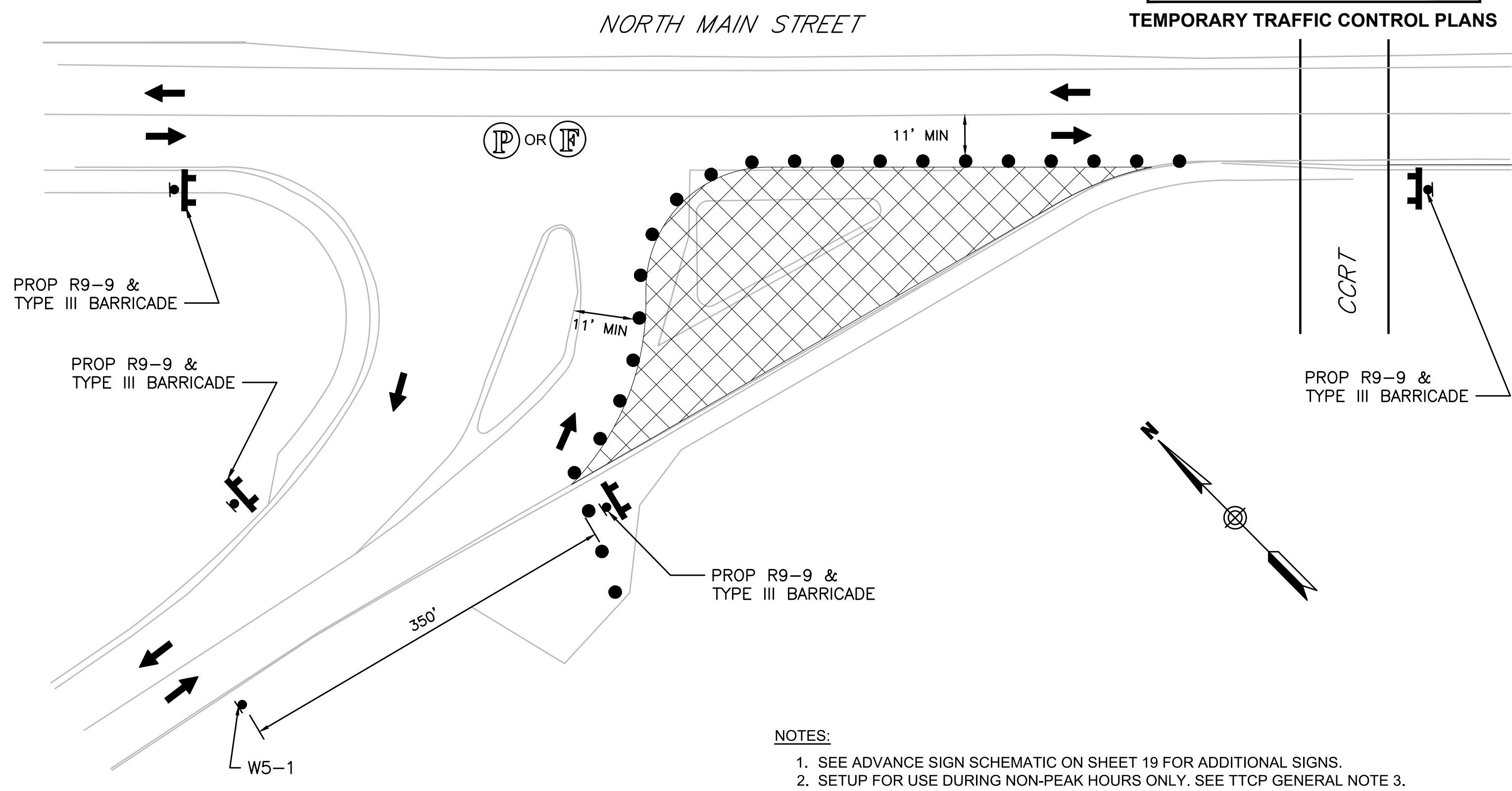
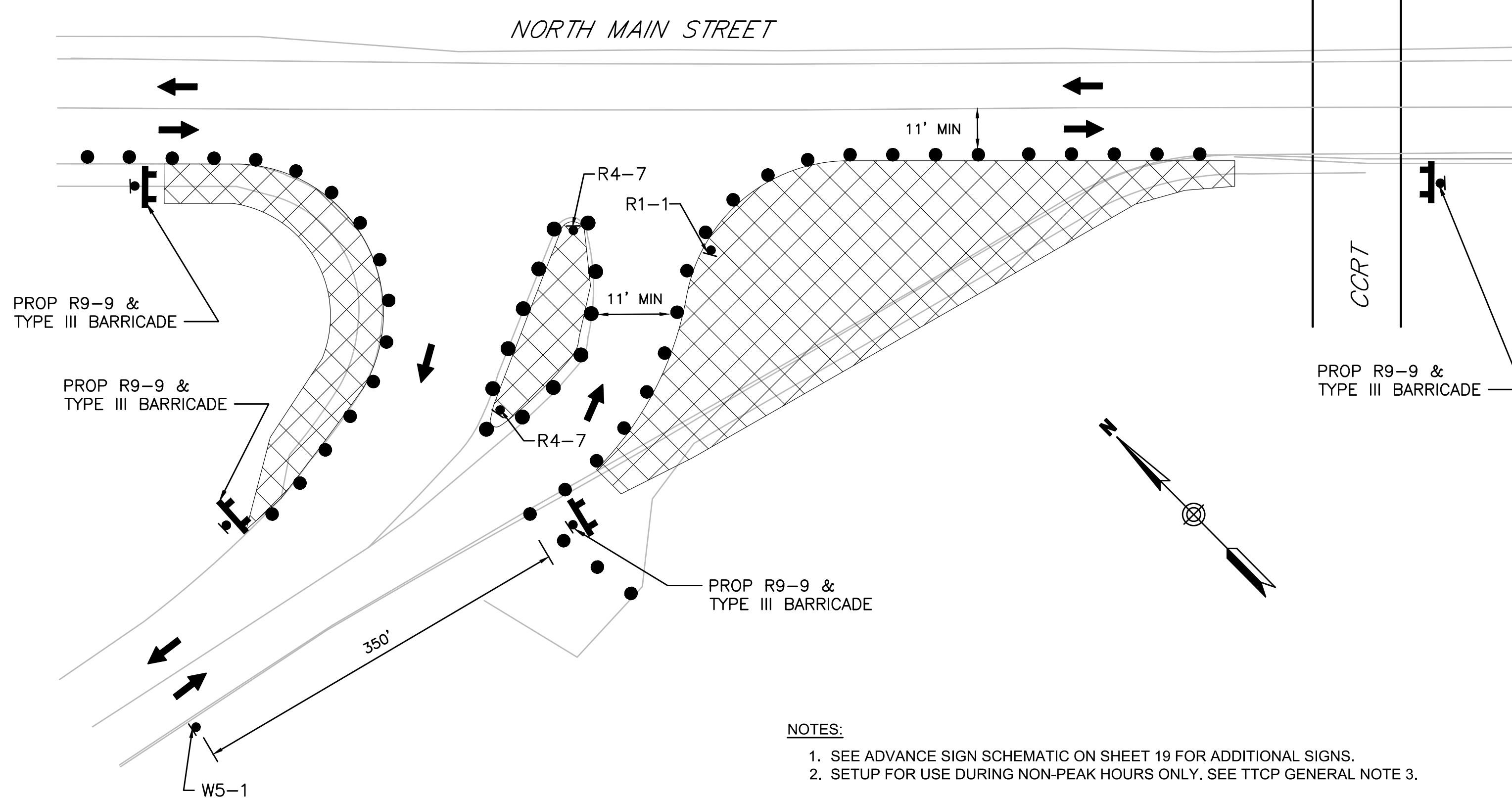
SCALE: NTS

YARMOUTH & DENNIS
CAPE COD RAIL TRAIL EXTENSION - PHASE II

STATE	FED. AID PROJ. NO.	HEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	17	68

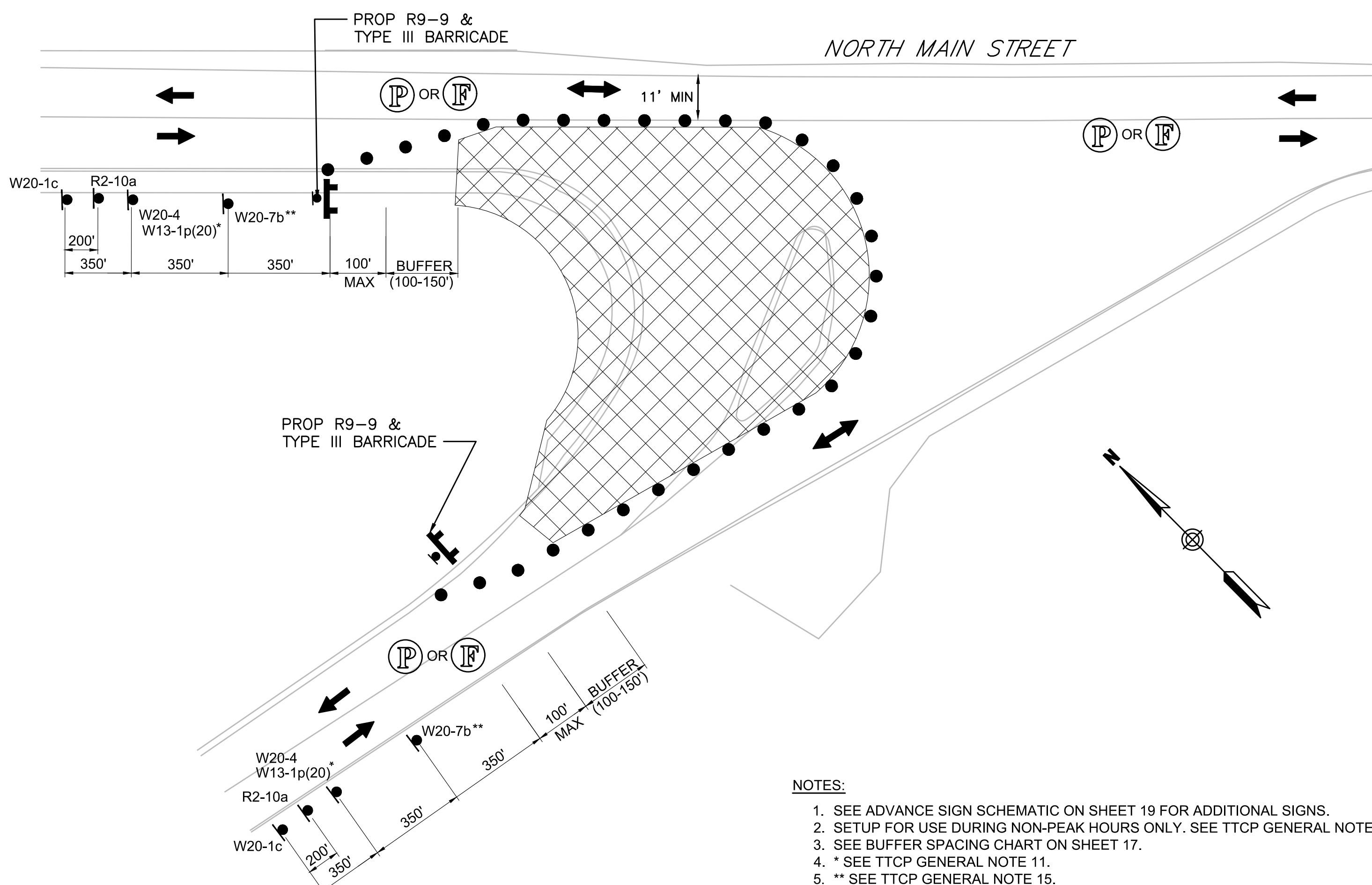
PROJECT FILE NO. 607571

TEMPORARY TRAFFIC CONTROL PLANS
GENERAL NOTES & LEGEND



WHITE'S PATH LANE MODIFICATIONS - NON WORKING HOURS SET UP

SCALE: NTS

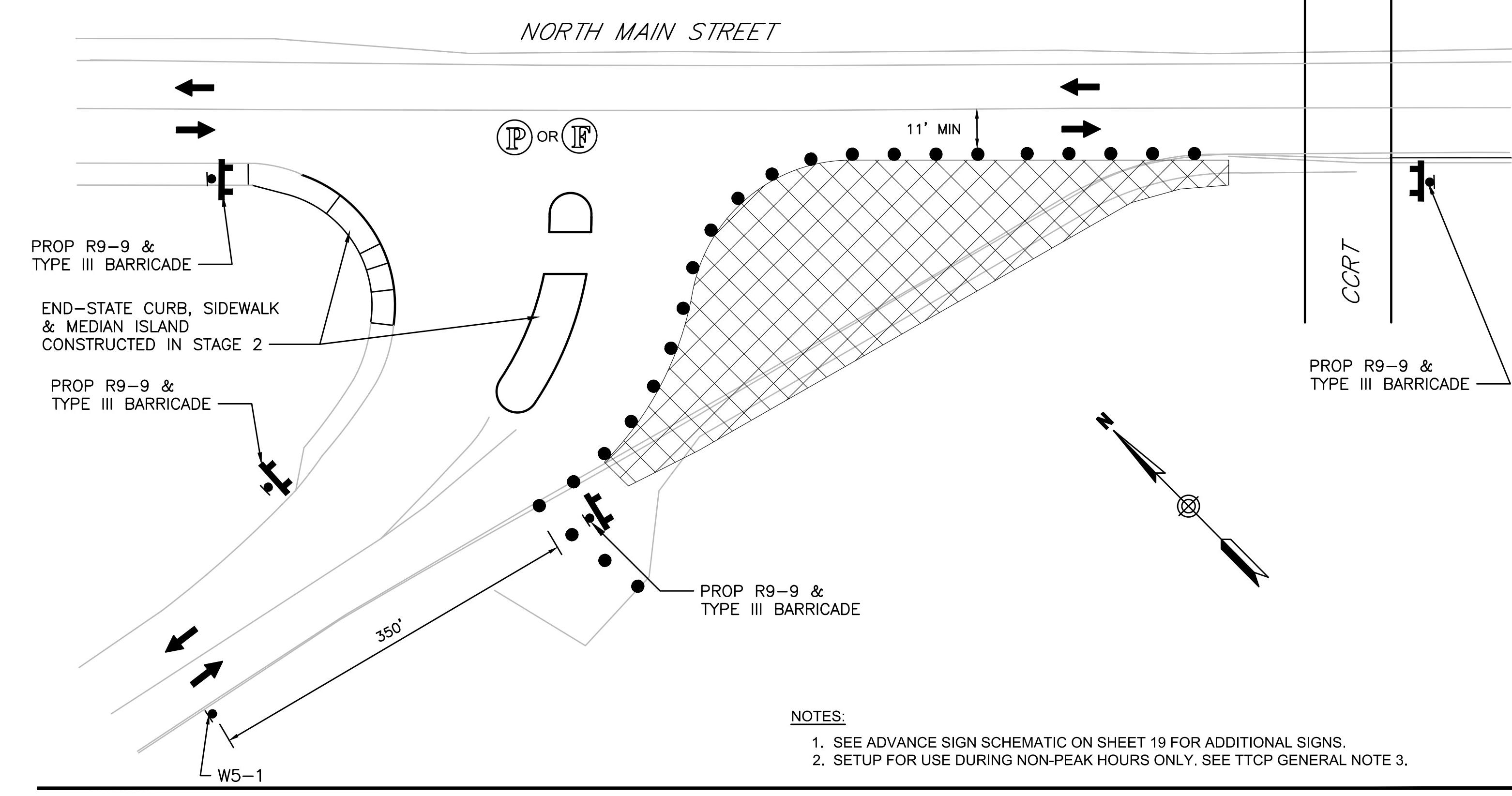


WHITE'S PATH LANE MODIFICATIONS - STAGE 2 - RECONSTRUCT MEDIAN ISLAND & NORTHWEST CORNER

SCALE: NTS

WHITE'S PATH LANE MODIFICATIONS - STAGE 1 - REMOVE SPLITTER ISLAND

SCALE: NTS



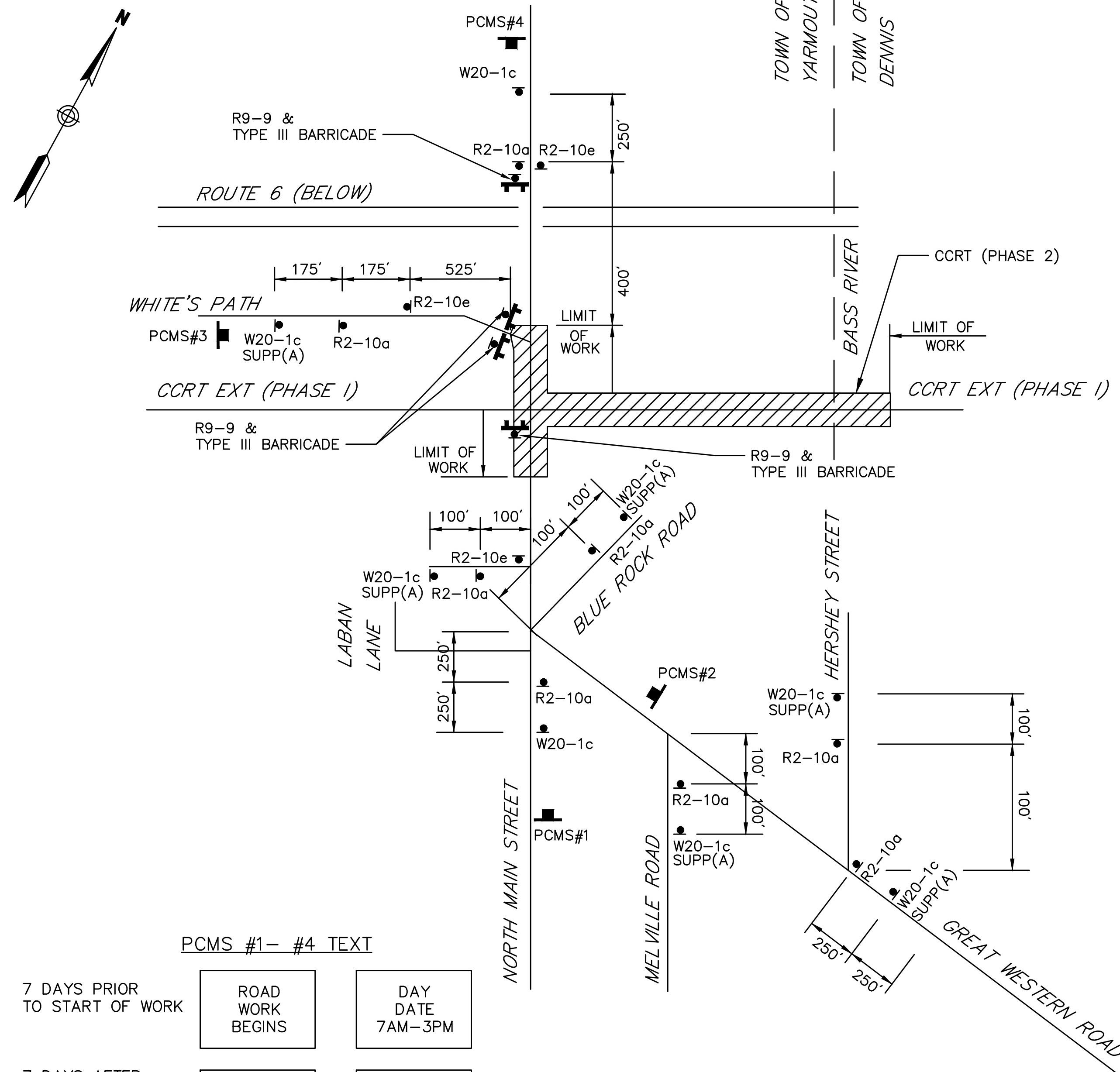
WHITE'S PATH LANE MODIFICATIONS - STAGE 3 - RECONSTRUCT SOUTHWEST CORNER

SCALE: NTS

ADVANCE SIGN SCHEMATIC

NTS

SIGNS TO BE INSTALLED AT THE PROJECT
LIMITS AS SHOWN.
ALL ADVANCE SIGNS TO BE IN PLACE FOR
THE DURATION OF THE PROJECT.



NOTES:

1. ADVANCE SIGNS TO BE INSTALLED AT THE PROJECT LIMITS AS SHOWN.
2. ALL ADVANCE SIGNS TO BE IN PLACE FOR THE DURATION OF THE PROJECT.
3. PCMS SHALL BE INSTALLED WITHIN THE EXISTING RIGHT-OF-WAY (ROW) OFF THE ROADWAY AT APPROXIMATE LOCATIONS SHOWN OR AS DIRECTED BY MASSDOT. PCMS SHALL NOT BE PLACED ON EXISTING SIDEWALK.
4. DAY AND DATE ON PCMS MESSAGING SHALL BE COORDINATED WITH MASSDOT.
5. CONTRACTOR SHALL PROVIDE PCMS A MINIMUM OF 7 DAYS PRIOR TO START OF CONSTRUCTION.
6. CONTRACTOR SHALL REMOVE ALL PCMS SHOWN 7 DAYS AFTER THE START OF CONSTRUCTION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	BACK-GROUND	COLOR	LEGEND	BORDER	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	HEIGHT	WIDTH						LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.			
R1-1	30"	30"		RED	WHITE			SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			1	5.18	5.18
R2-10a	48"	36"		FLOURESCENT ORANGE WHITE	BLACK	BLACK		SEE MASSDOT STANDARDS			11	12.00	132.00
R2-10e	36"	48"		FLOURESCENT ORANGE WHITE	BLACK	BLACK		SEE MASSDOT STANDARDS			6	12.00	72.00
R4-7	30"	24"		WHITE	BLACK	BLACK		SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			2	5.00	10.00
R9-9	18"	30"		WHITE	BLACK	BLACK					5	3.75	18.75
W5-1	36"	36"		FLOURESCENT ORANGE	BLACK	BLACK					1	9.00	9.00
W8-15	36"	36"		FLOURESCENT ORANGE	BLACK	BLACK					3	9.00	27.00
W13-1(20)	24"	24"		FLOURESCENT ORANGE	BLACK	BLACK					3	4.00	12.00
W20-8a	36"	36"		FLOURESCENT ORANGE	BLACK	BLACK					3	9.00	27.00
W20-1c	36"	36"		FLOURESCENT ORANGE	BLACK	BLACK					11	9.00	99.00
W20-4	36"	36"		FLOURESCENT ORANGE	BLACK	BLACK					3	9.00	27.00
W20-7	36"	36"		FLOURESCENT ORANGE	BLACK	BLACK		SEE MASSDOT STANDARDS			3	9.00	27.00
W20-7b	36"	36"		FLOURESCENT ORANGE	BLACK	BLACK		SEE MASSDOT STANDARDS			3	9.00	27.00
SUPP(A)	12"	36"	N. MAIN ST	FLOURESCENT ORANGE	BLACK	BLACK		SEE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			6	3.00	18.00

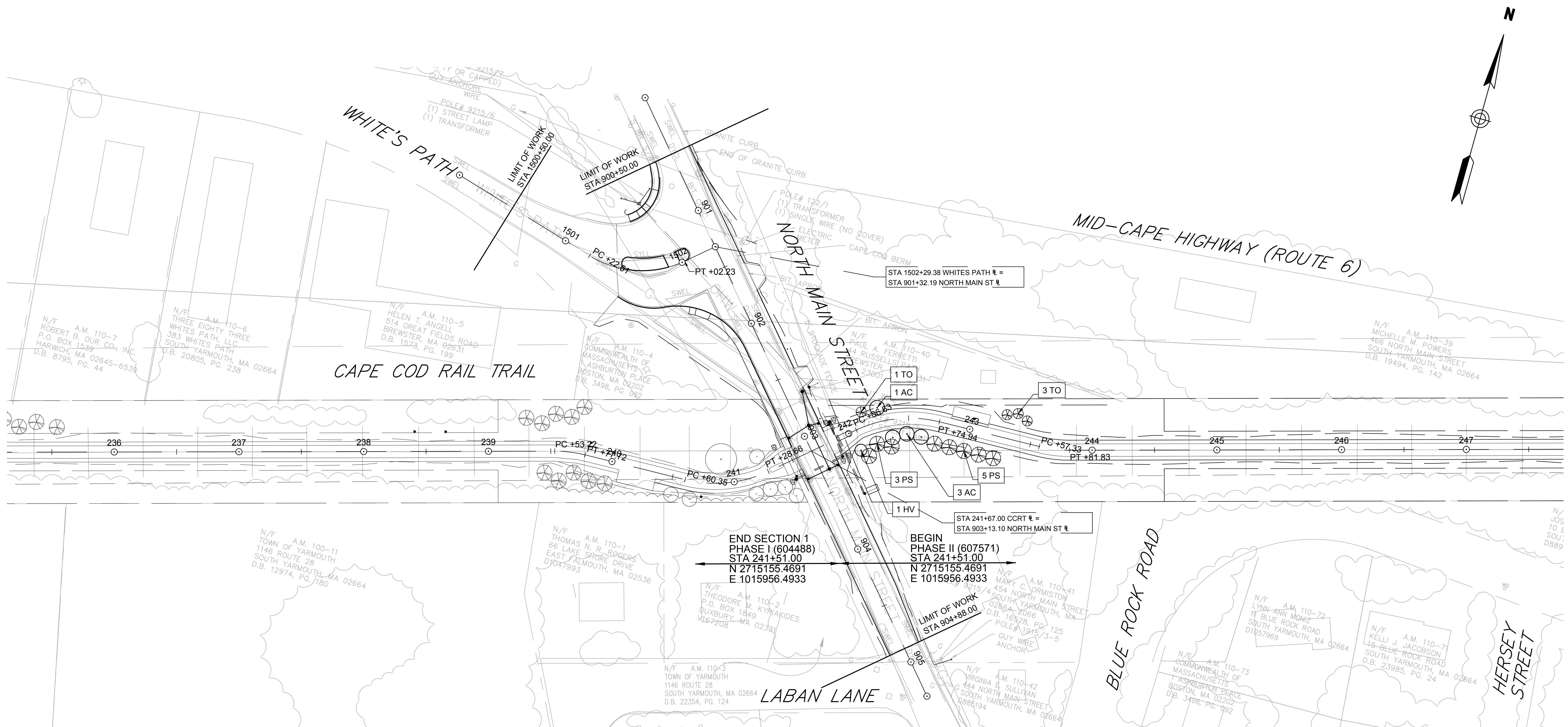
NOTE: HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS.

LANDSCAPE PLANT LIST						
LABEL	SYMBOL	BOTANICAL NAME	COMMON NAME	UNIT	QUANTITY	SIZE
AC	(•)	AMELANCHIER CANADENSIS	SHAD TREE	EA	4	4-5'
HV	(○)	HAMAMELIS VIRGINIANA	WITCH HAZEL SPRING BLOOMING	EA	1	2-3' HT
PS	(△)	PINUS STROBOS	PINE WHITE	EA	8	5-6' H
TO	(⊗)	THUJA OCCIDENTALIS (NIGRA)	ARBORVITAE - DARK AMERICAN	EA	4	5-6'
EVERGREEN TREE						

NOTE:
1. ALL AREAS WITHIN LIMIT OF WORK NOT COVERED WITH STRUCTURES, PADS, PAVEMENT, WASHED STONE OR RIPRAP
SHALL RECEIVE A 2-IN LAYER OF COMPOST TOPSOIL AND SEED OVER A 4-IN LAYER OF LOAM.
2. LANDSCAPE QUANTITIES ARE PER SHEET.

YARMOUTH & DENNIS CAPE COD RAIL TRAIL EXTENSION - PHASE II			
STATE	FED. AID PROJ. NO.	HEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	20	68
PROJECT FILE NO. 607571			

LANDSCAPE PLANS & DETAILS



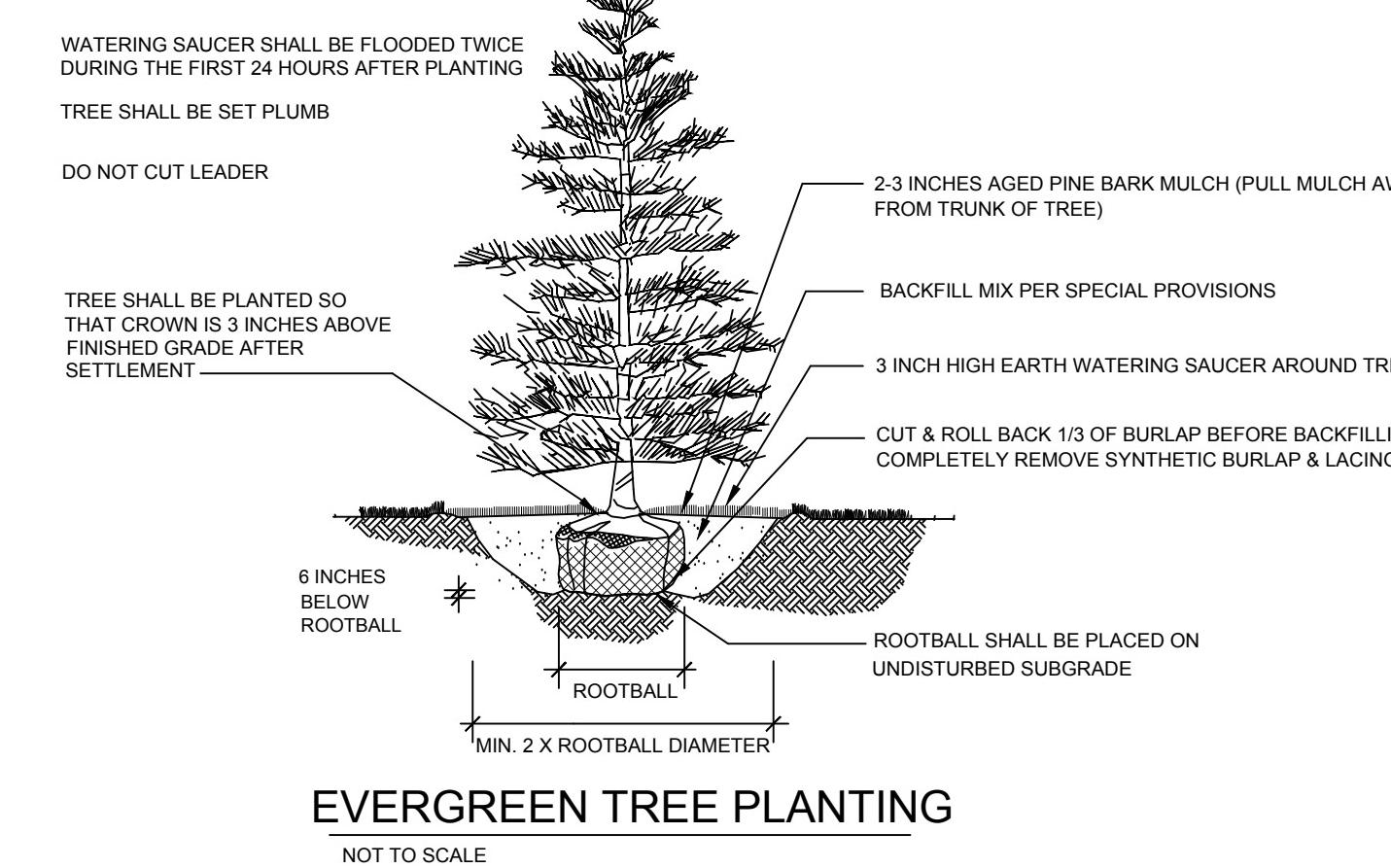
OVERALL LANDSCAPE PLAN

PLAN

40 0 40 80
SCALE IN FEET

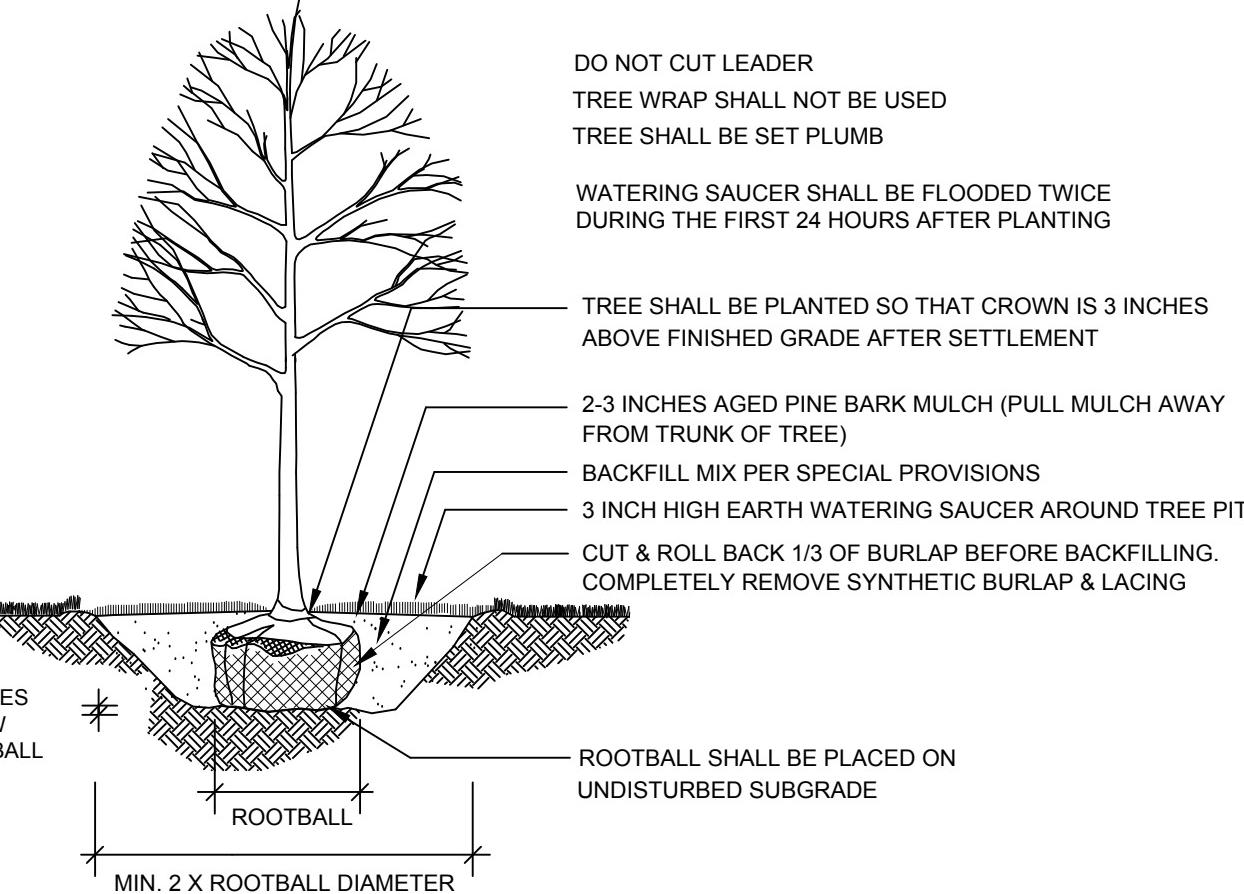
LANDSCAPE PLANS & DETAILS

	ORNAMENTAL TREES
	EVERGREEN TREES
	SHRUBS



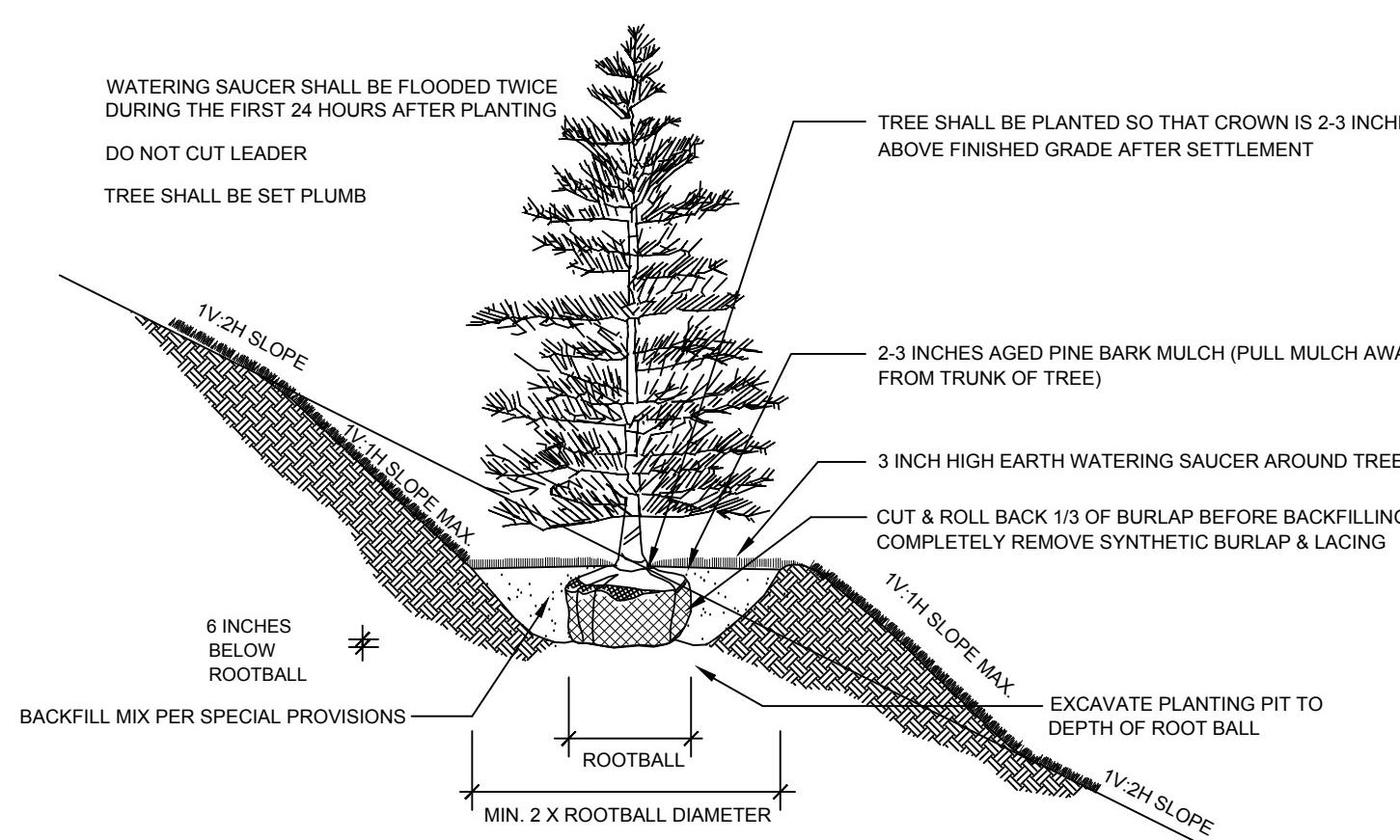
EVERGREEN TREE PLANTING

NOT TO SCALE



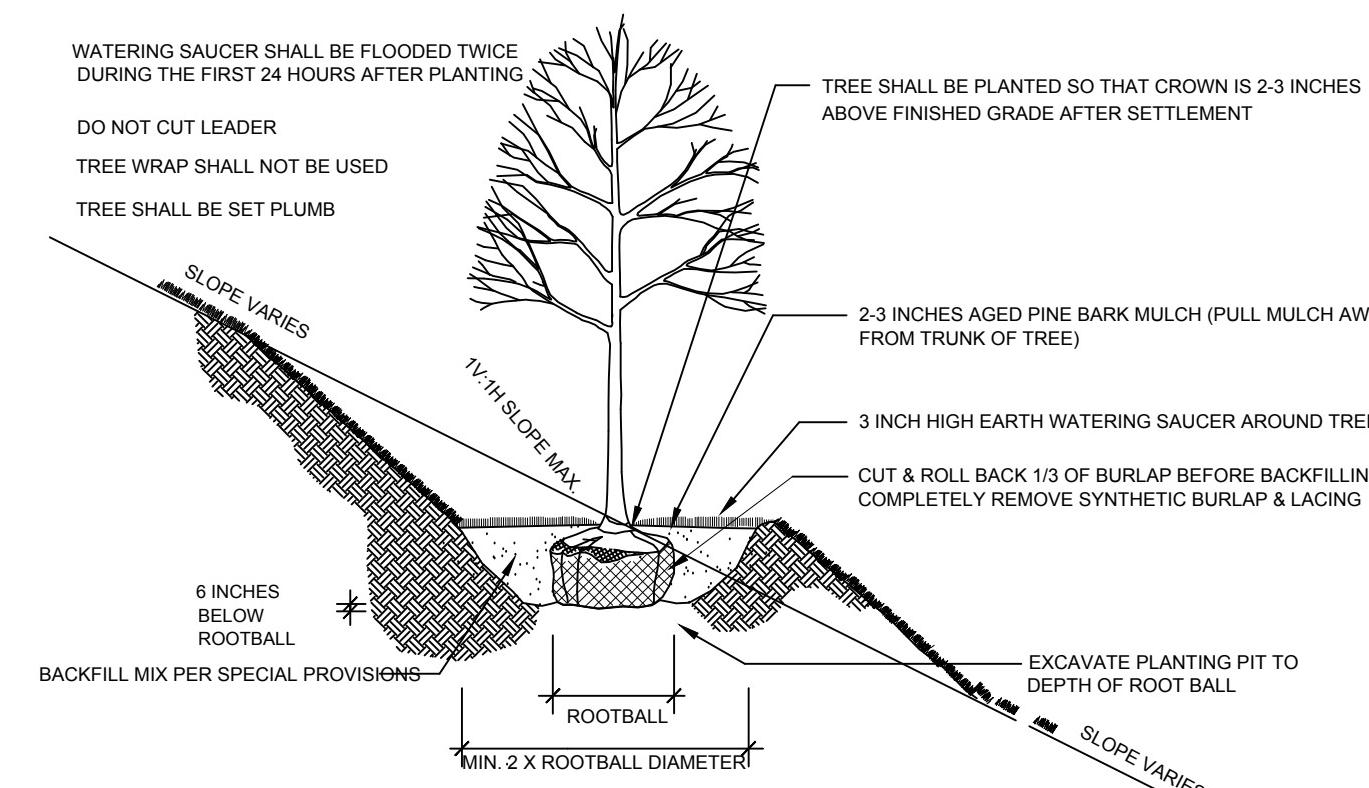
DECIDUOUS TREE PLANTING

NOT TO SCALE



EVERGREEN TREE PLANTING (SLOPE)

NOT TO SCALE



DECIDUOUS TREE PLANTING (SLOPE)

NOT TO SCALE

MASTER PLANT SUMMARY LIST						
QTY.	KEY	BOTANICAL NAME	COMMON NAME	UNIT.	SIZE	SPACING
EVERGREEN TREES						
13	PS	PINUS STROBOS	PINE WHITE	EA	5-6' H	10 FT O.C.
4	TO	THUJA OCCIDENTALIS (NIGRA)	ARBORVITAE - DARK AMERICAN	EA	5'-6'	10 FT O.C.
SHADE TREES						
4	AC	AMELANCHIER CANADENSIS	SHAD TREE	EA	4-5'	12 FT O.C.
6	HV	HAMAMELIS VIRGINIANA	WITCH HAZEL SPRING BLOOMING	EA	2-3' HTL	12 FT O.C.

YARMOUTH & DENNIS CAPE COD RAIL TRAIL EXTENSION - PHASE II

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	22	68
PROJECT FILE NO. 607571			

DRAINAGE & UTILITY PLAN

607551HB (UTL).DWG Plotted on 25-Aug-2016 1:19 PM

YARMOUTH & DENNIS
CAPE COD RAIL TRAIL EXTENSION - PHASE

STATE	FED. AID PROJ. NO.	HEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	22	68
PROJECT FILE NO. 607571			

DRAINAGE & UTILITY PLAN

LIMIT OF WORK STA 900+50.00 N2715366.5942 E1015798.4812

LIMIT OF PAVING STA 1501+46.33 N2715267.3416 E1015780.2121

NORTH MAIN STREET DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
401	DMH	902+66.8 13.6 L	25.12	(402) 19.50		BUILD OVER EXIST PIPES USE EXIST INVERT OUT
402	DMH	902+93.4 6.7 L	24.95	(407) 19.64 (404) 19.64 (403) 20.43	19.64	
403	CB	902+95.4 14.4 L	24.85		20.51	
404	CB	902+95.9 12.0 R	24.71		19.74	
405	CB	903+32.2 14.5 L	24.61		20.55	
406	CB	903+32.2 12.0 R	24.74		19.92	
407	DMH	903+32.2 6.9 L	24.75	(406) 19.83 (405) 20.47	19.83	

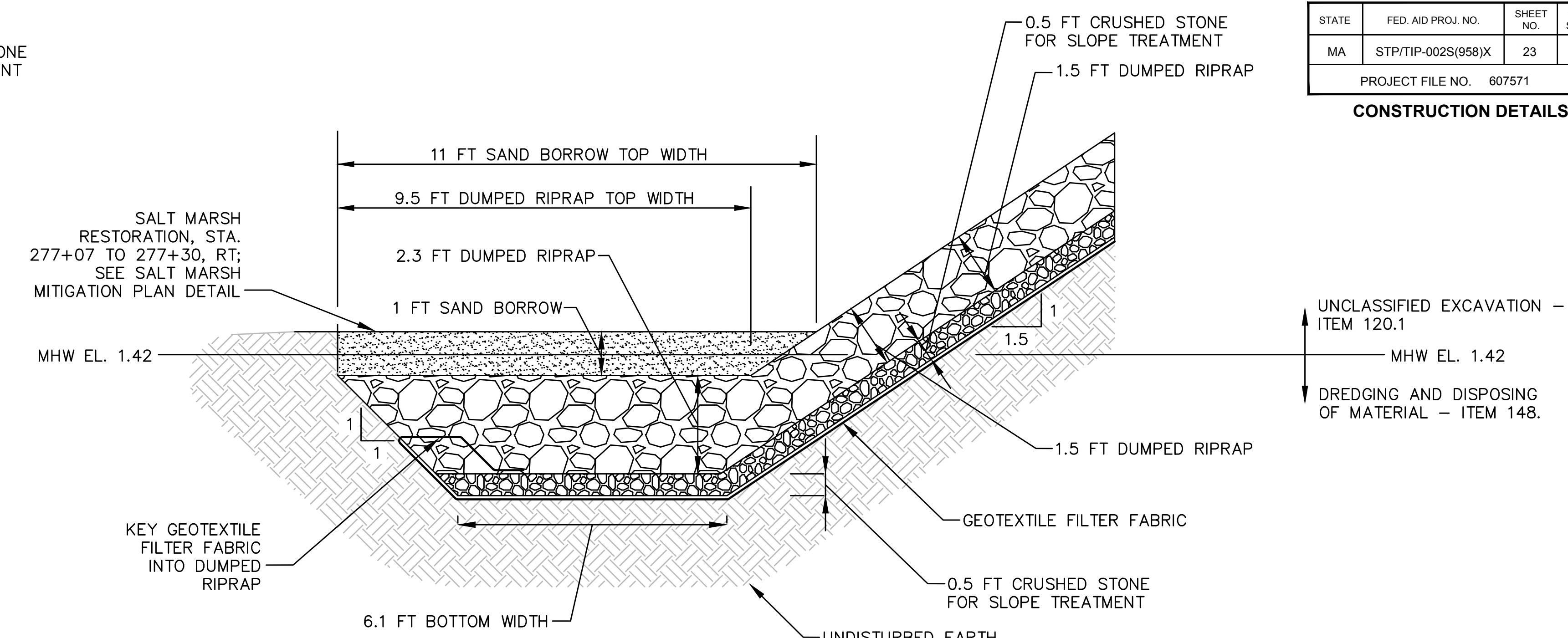
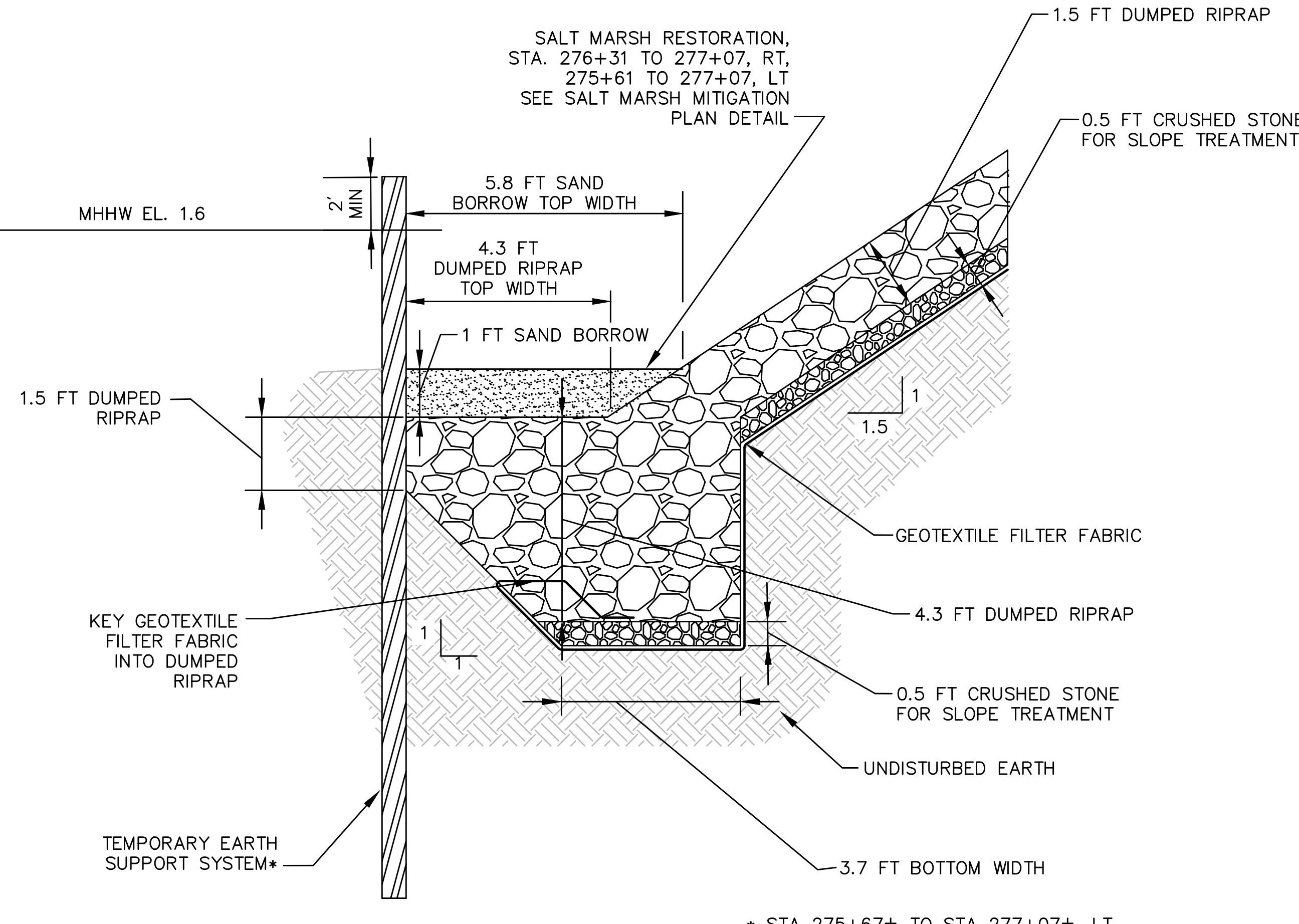
SCALE: 1" = 20'

**YARMOUTH & DENNIS
CAPE COD RAIL TRAIL EXTENSION - PHASE II**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	23	68

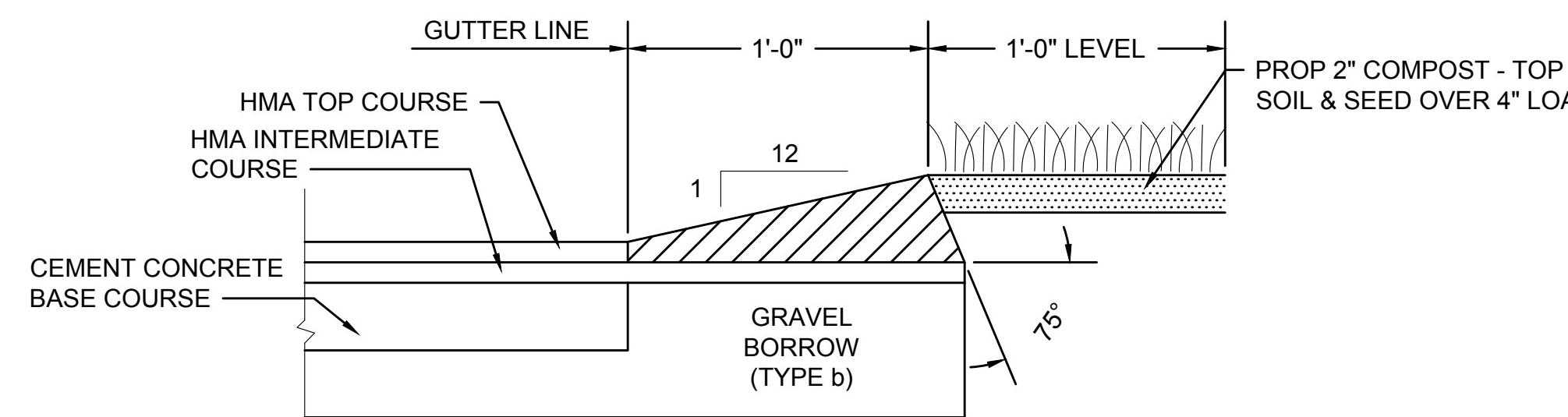
PROJECT FILE NO. 607571

CONSTRUCTION DETAILS



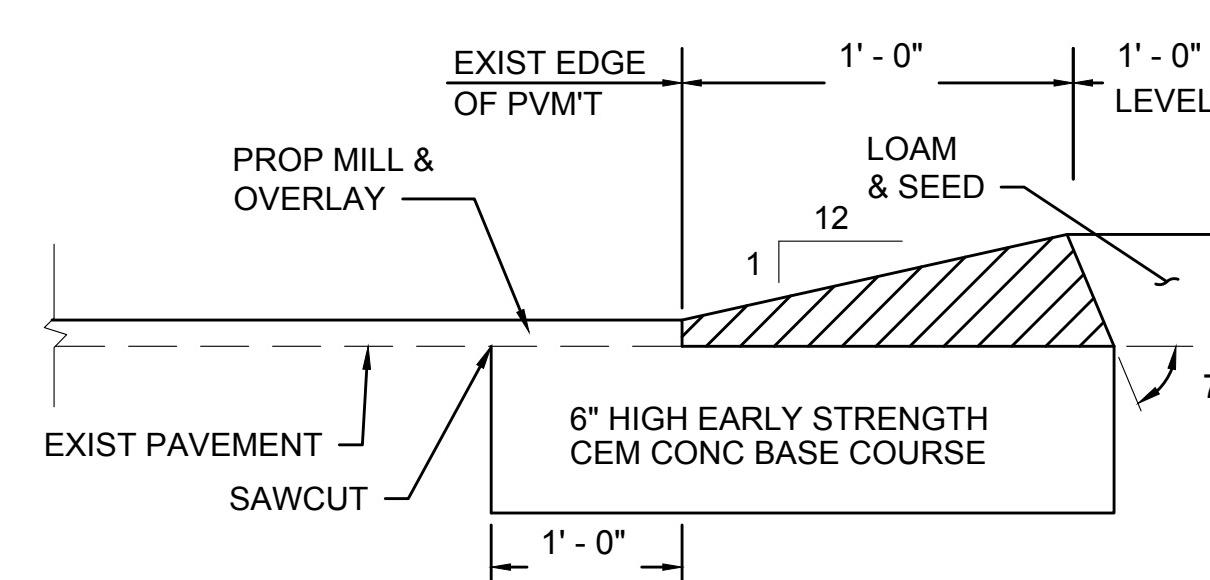
**BASS RIVER – REVETMENT TOE
TYPE 1**

SCALE: NOT TO SCALE
DATE:
DWG:



HMA BERM TYPE A-MODIFIED (USED WITH FULL DEPTH PAVEMENT LESS THAN 4.0 FEET WIDE)

SCALE: N.T.S.

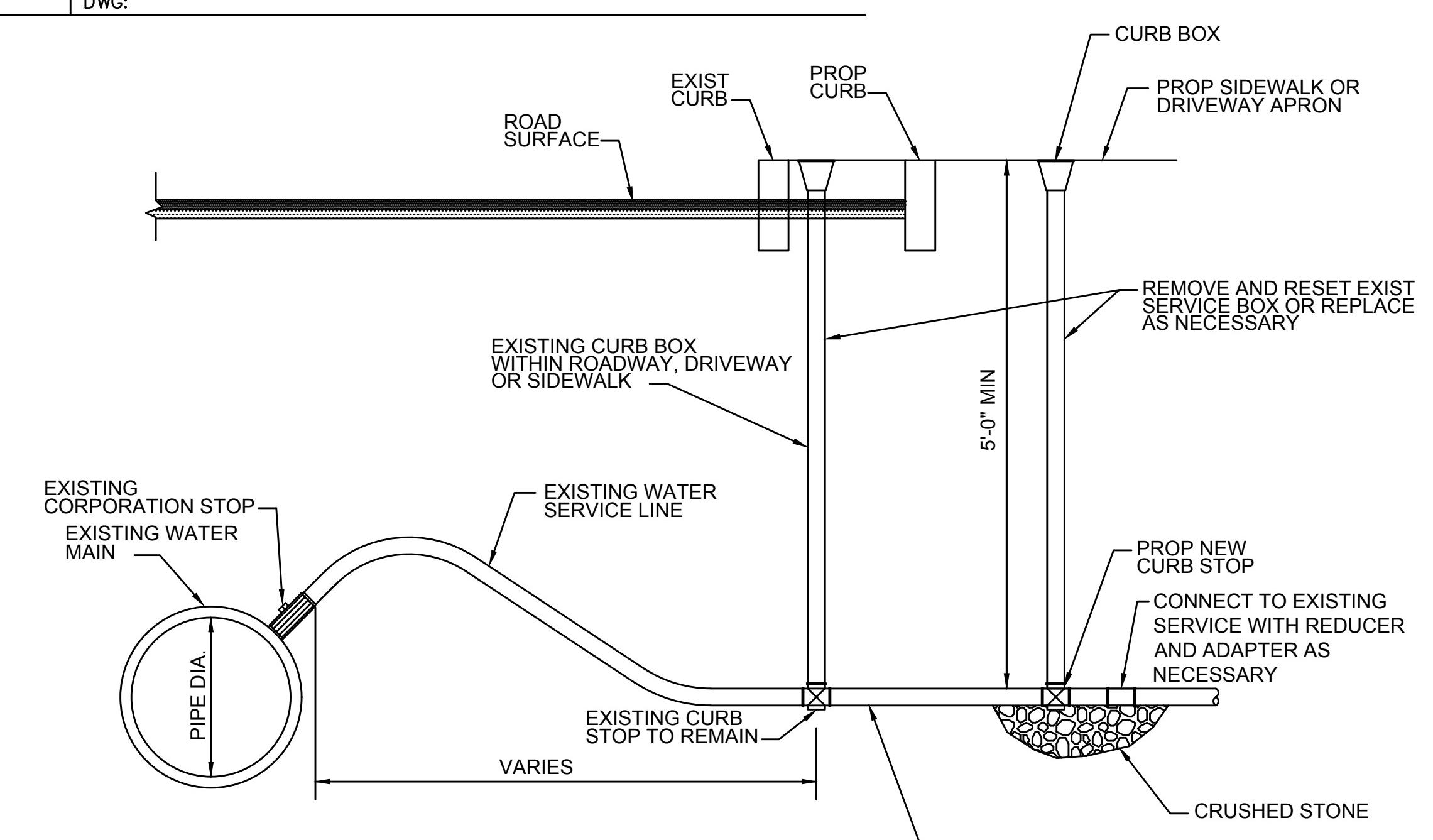


**HOT MIX ASPHALT BERM TYPE A - MODIFIED
AT PAVEMENT MILL & OVERLAY**

SCALE: N.T.S.

**BASS RIVER – REVETMENT TOE
TYPE 2**

SCALE: NOT TO SCALE
DATE:
DWG:



- NOTE:**
1. INSTALLATIONS SHALL CONFORM WITH MUNICIPAL WATER WORKS SPECIFICATIONS AND STANDARDS.
 2. IF EXISTING WATER SERVICE LINE IS NOT PLASTIC, CONTRACTOR SHALL NOTIFY THE YARMOUTH WATER DEPARTMENT. NO CONNECTION SHALL BE MADE UNTIL THE YARMOUTH WATER DEPARTMENT DETERMINES IF THE EXISTING LINE IS SUITABLE TO BE EXTENDED OR MUST BE REPLACED TO THE MAIN.

CURB STOP RELOCATION DETAIL

SCALE: NOT TO SCALE
DATE: APRIL 2014
DWG:

YARMOUTH & DENNIS
CAPE COD RAIL TRAIL EXTENSION - PHASE II

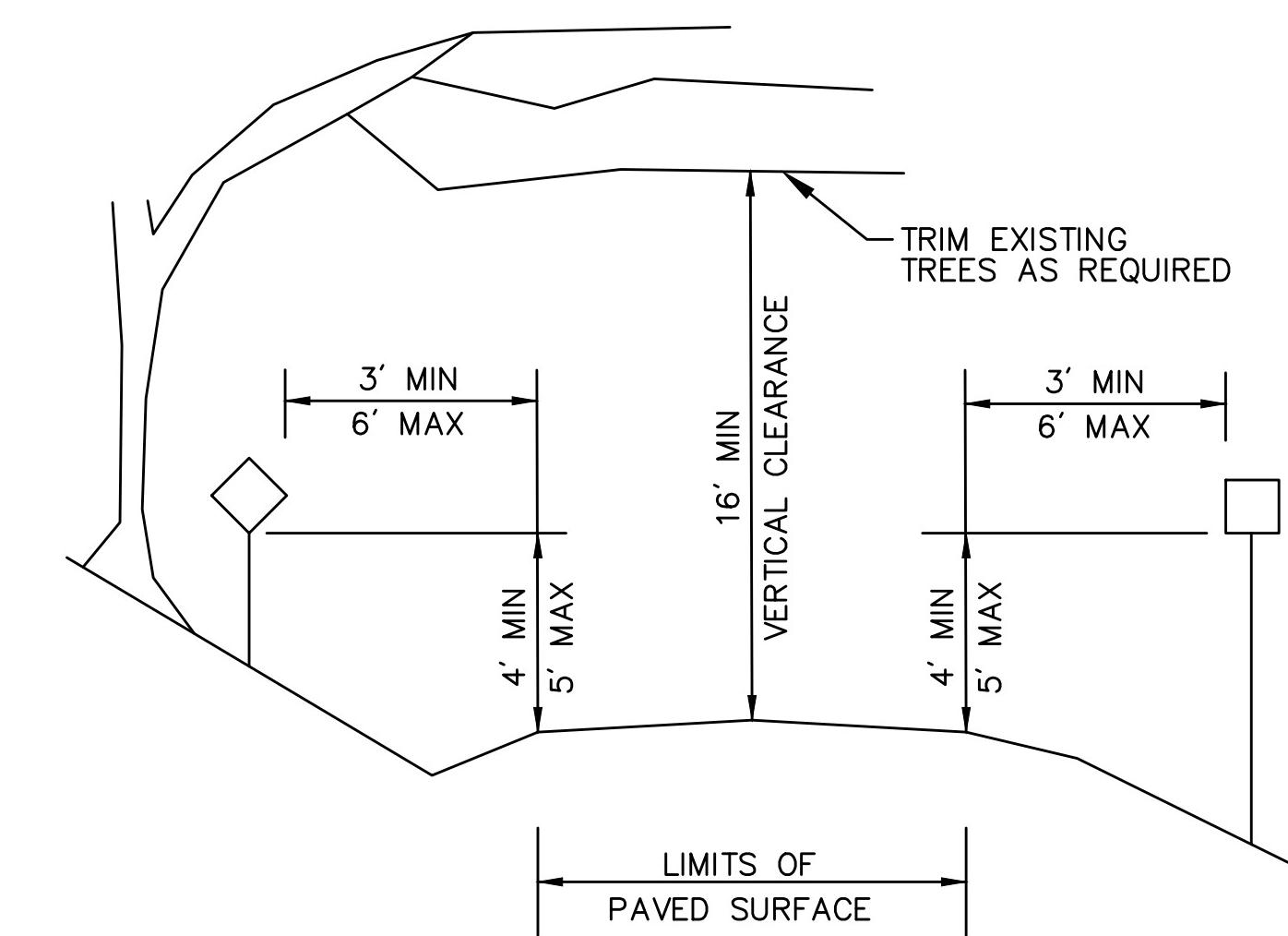
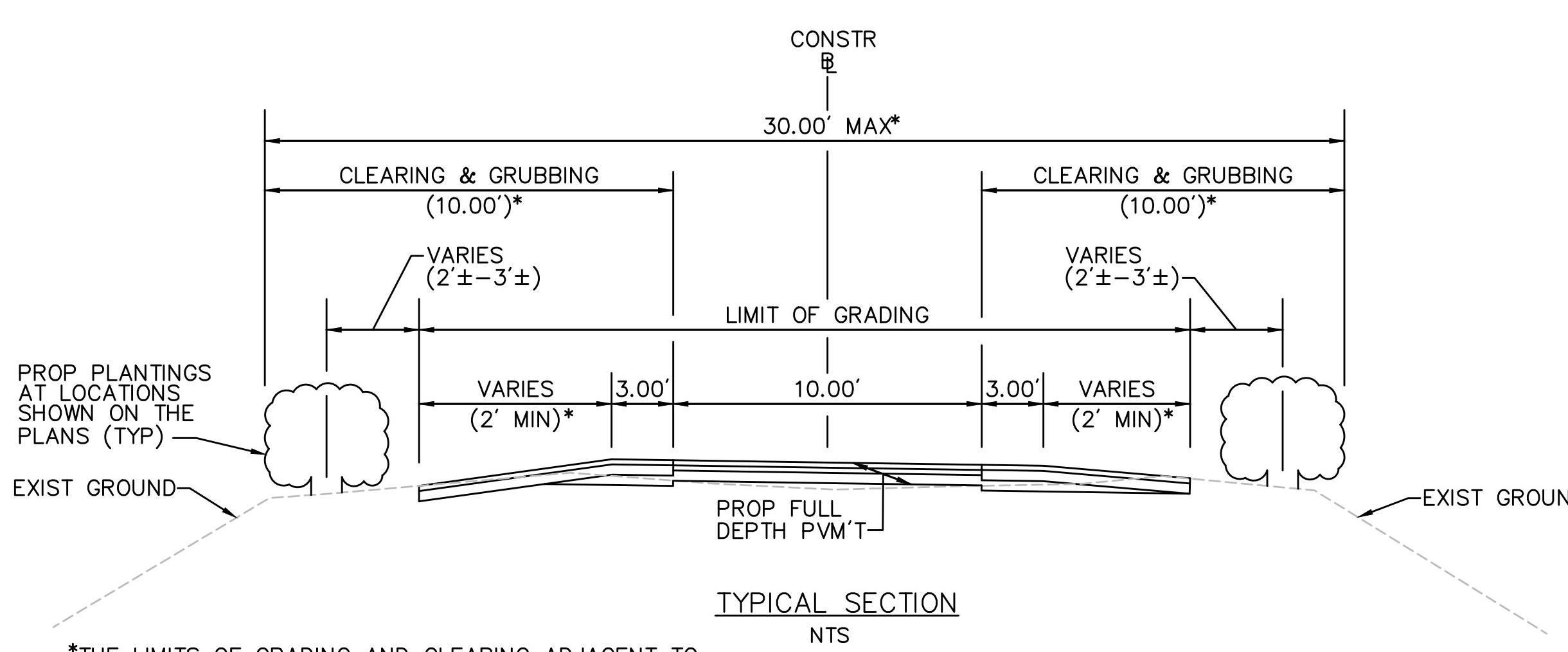
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	24	68

PROJECT FILE NO. 607571

CONSTRUCTION DETAILS

Plotted on 25-Aug-2016 1:19PM

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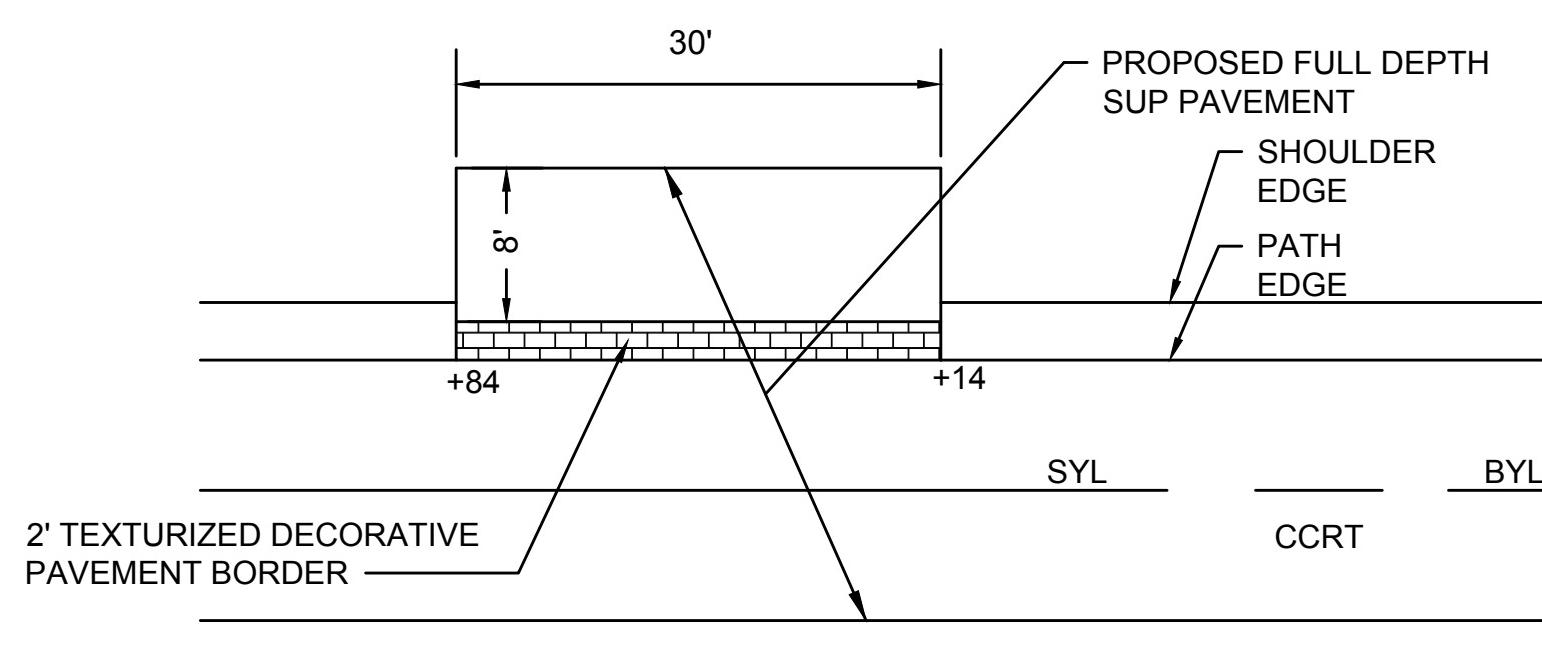


HORIZONTAL AND VERTICAL CLEARANCES

SCALE: NOT TO SCALE

CLEARING AND GRUBBING LIMITS

SCALE: NOT TO SCALE

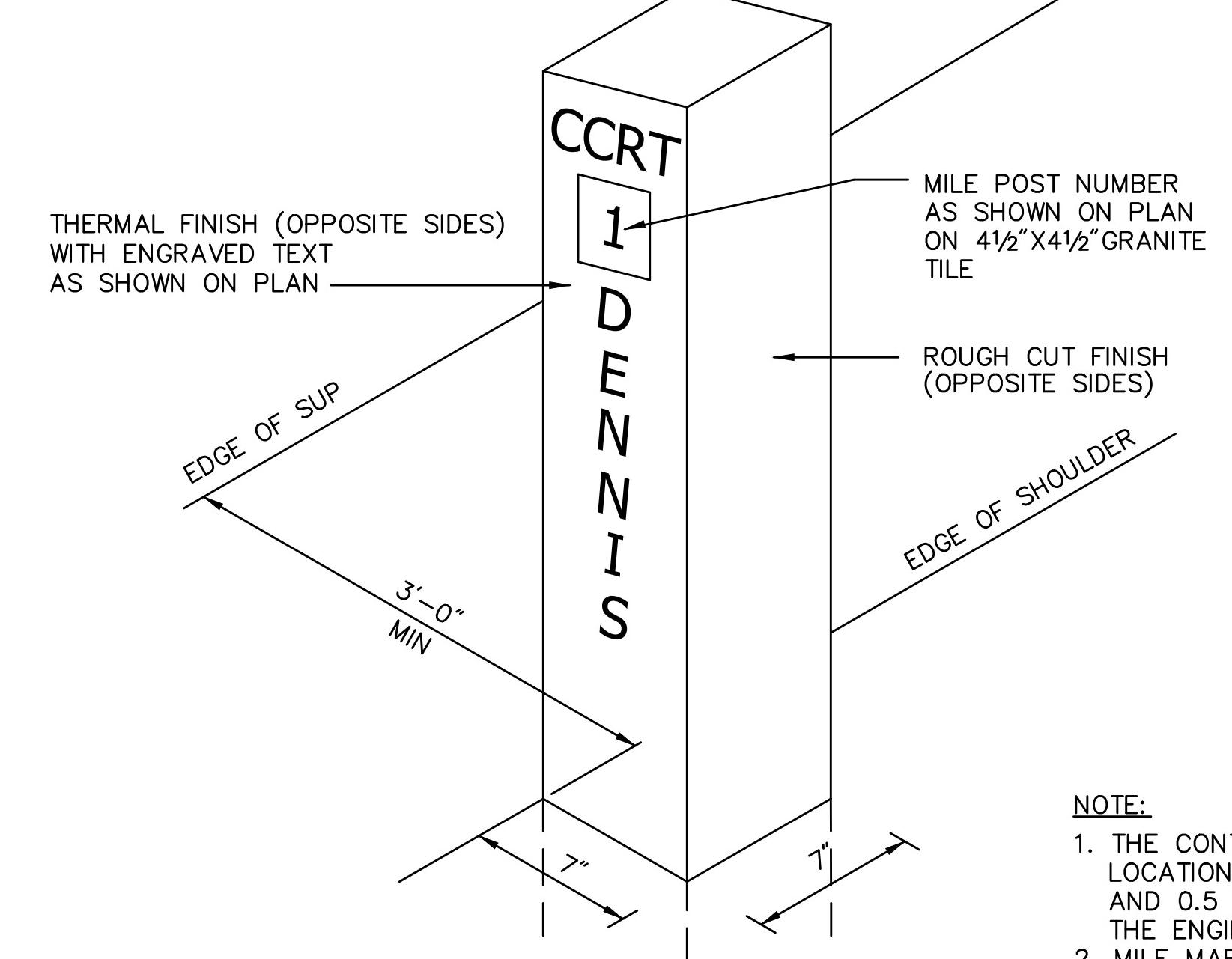


TRAIL PULLOVER AREA, STA 243+00± LT

SCALE: NOT TO SCALE

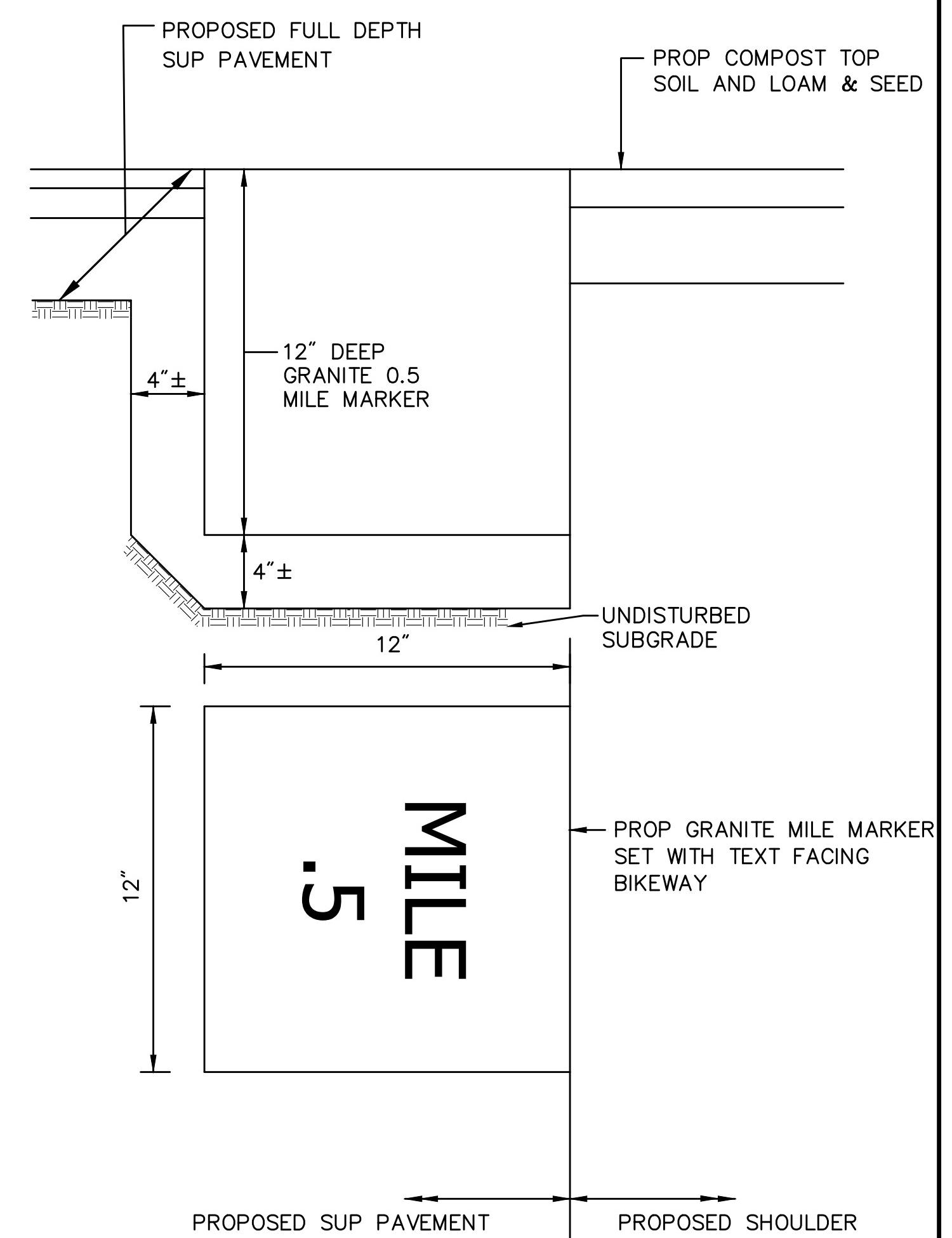
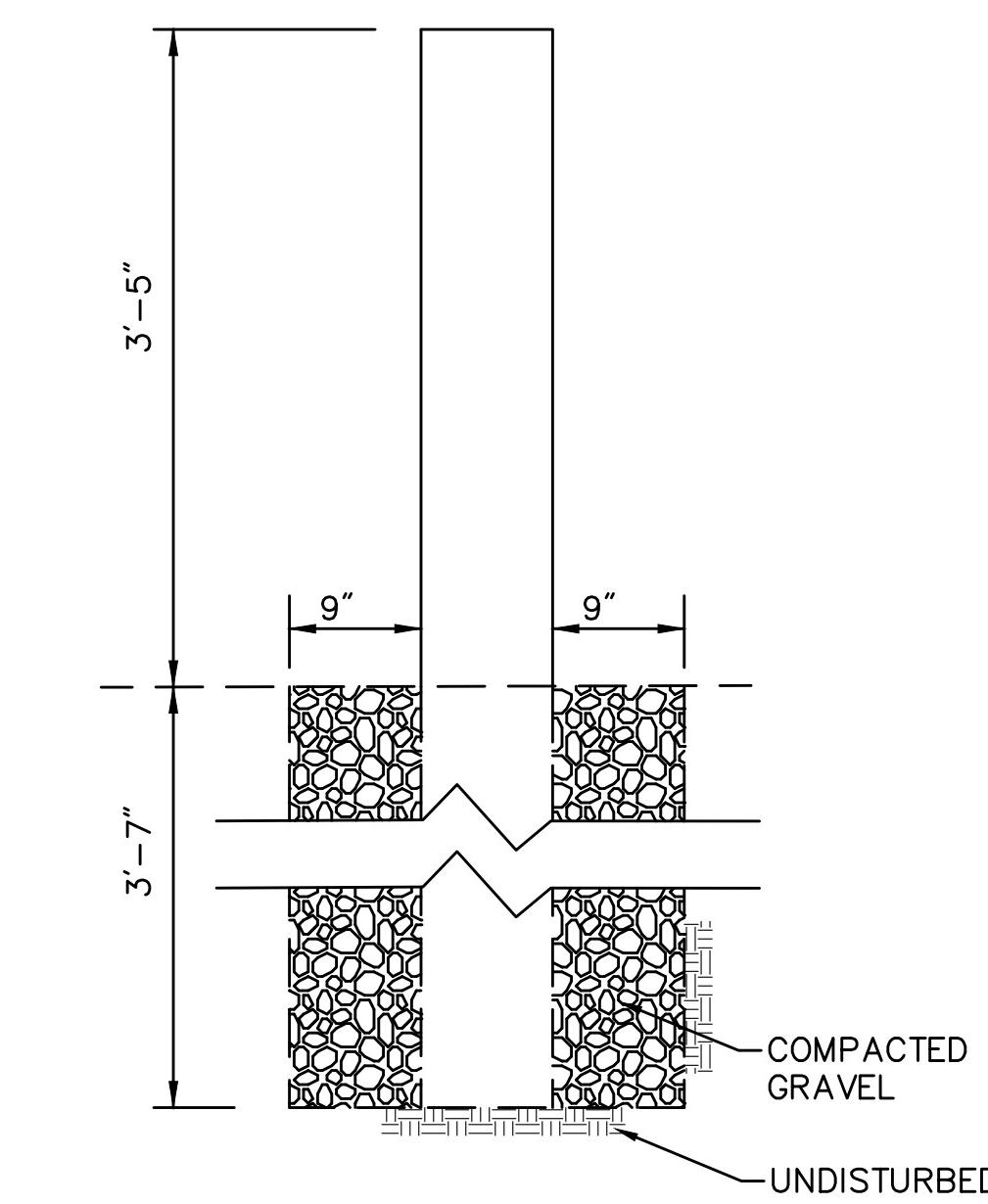
DATE:

DWG:



GRANITE MILE POST

SCALE: NOT TO SCALE



NOTE:
1. 0.5 MILE MARKERS SHALL BE PLACED ON THE LEFT SIDE OF THE PATH.

GRANITE 0.5 MILE MARKER

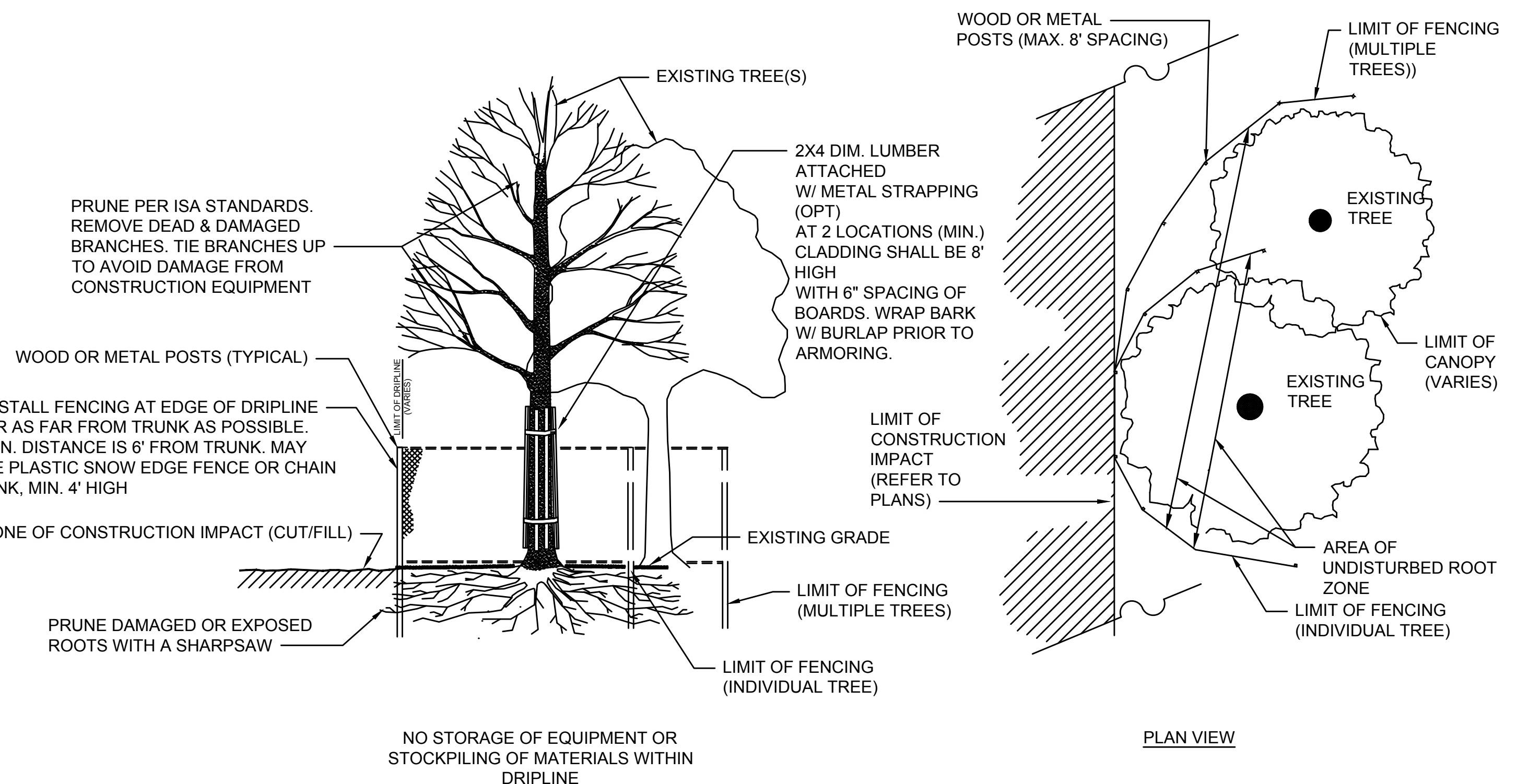
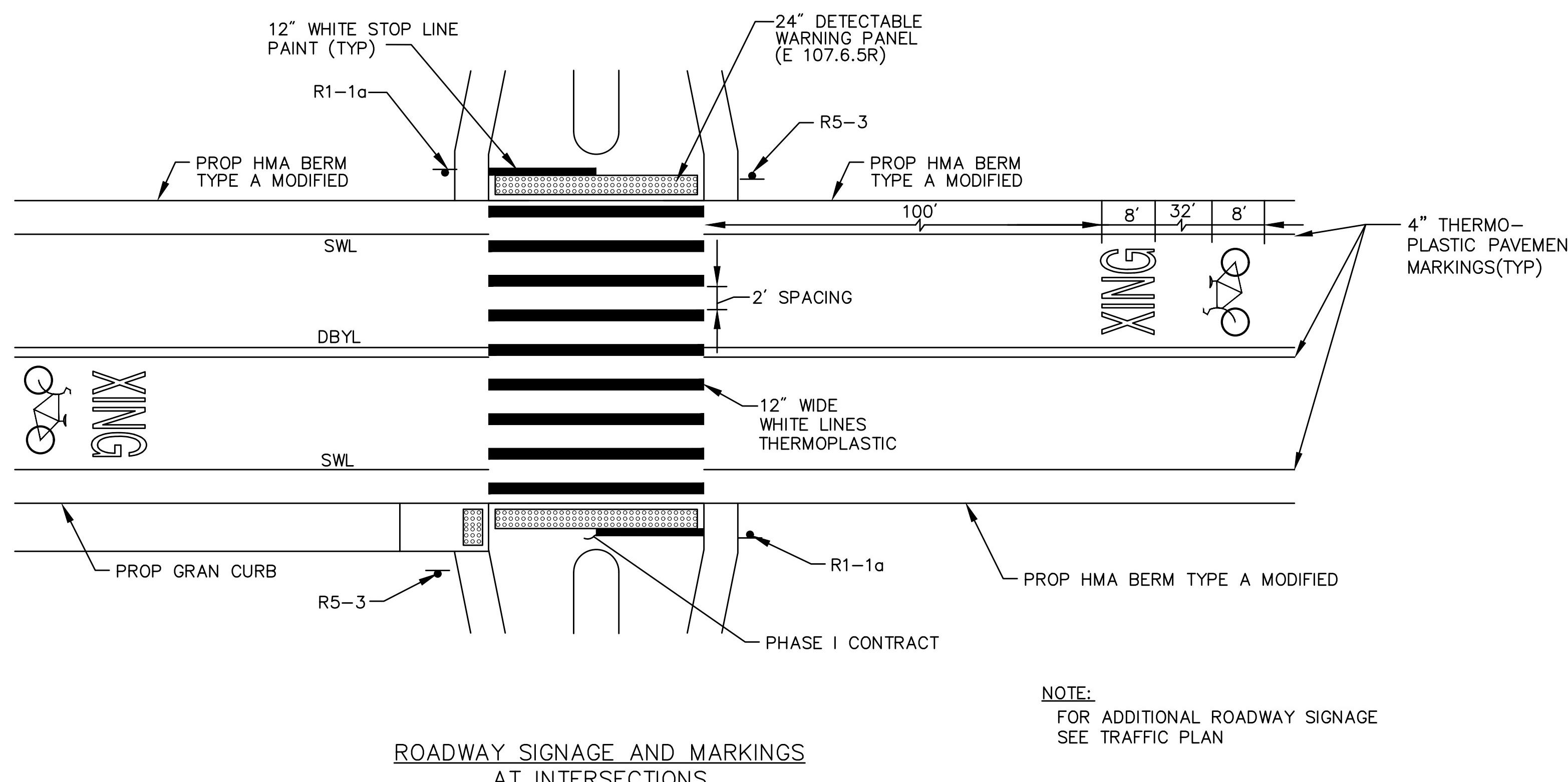
SCALE: NOT TO SCALE

YARMOUTH & DENNIS
CAPE COD RAIL TRAIL EXTENSION - PHASE II

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	25	68
PROJECT FILE NO. 607571			

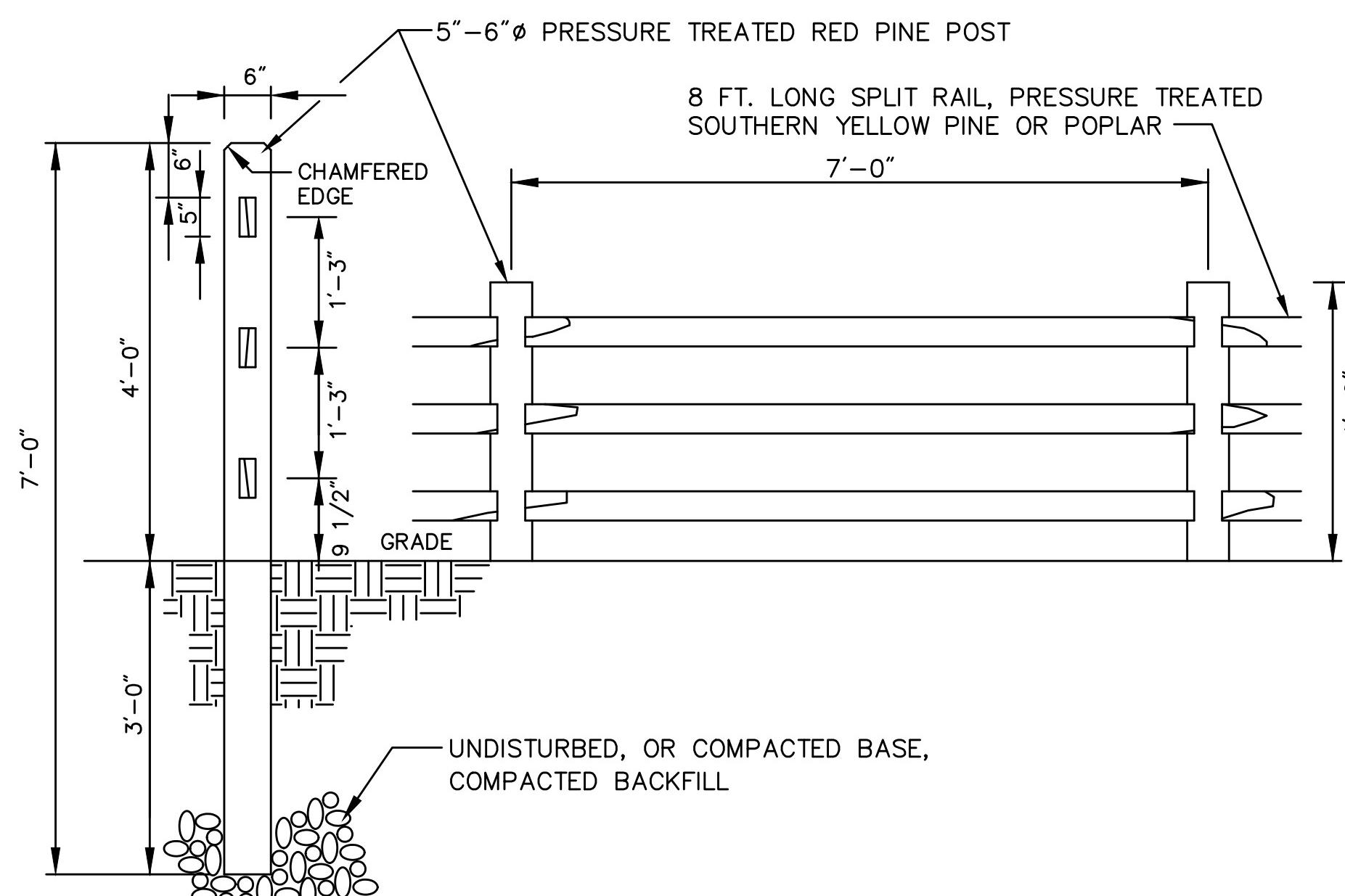
Plotted on 25-Aug-2016 1:19PM

607571HD (DET).DWG



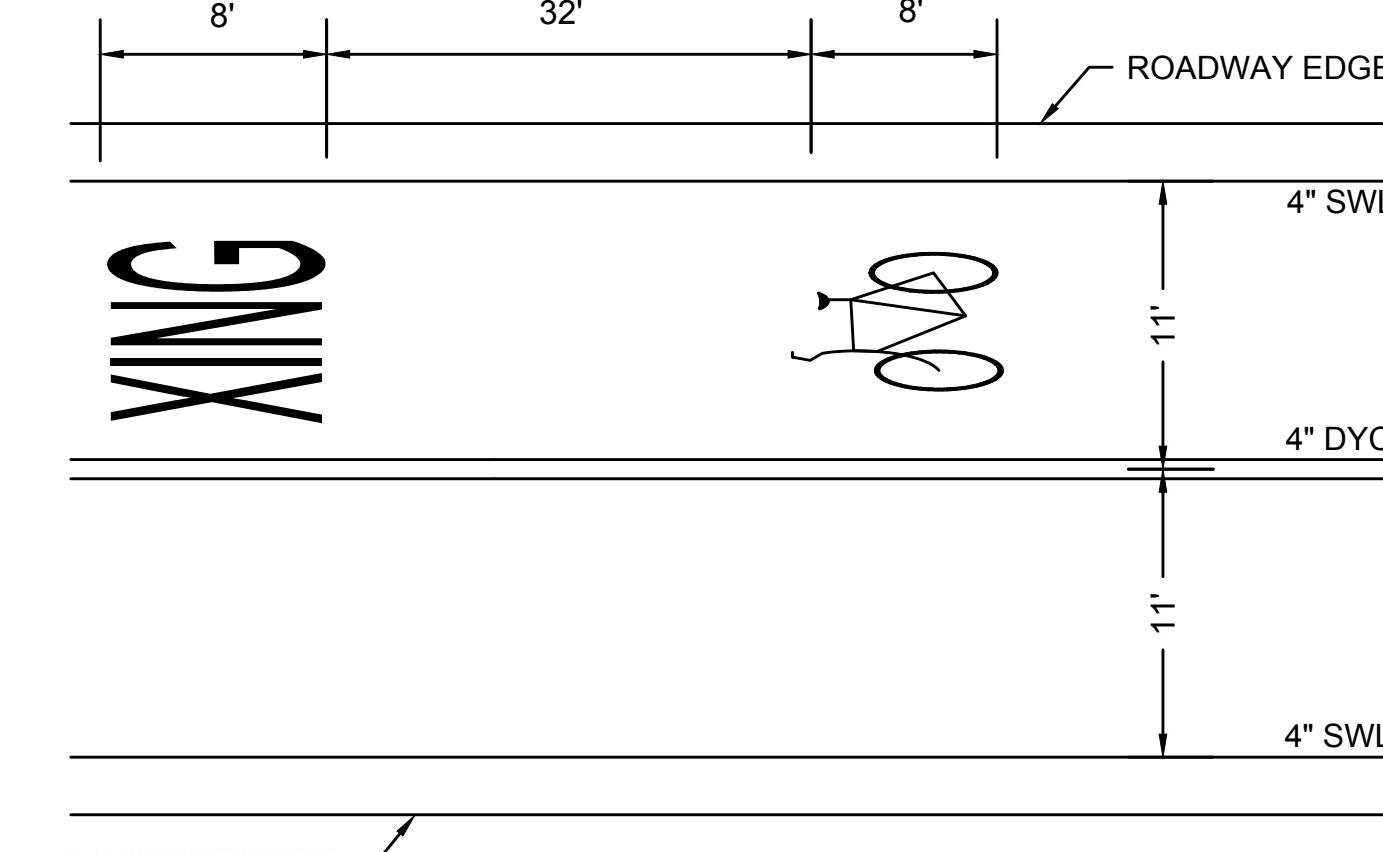
NORTH MAIN STREET AT-GRADE INTERSECTION

SCALE: NOT TO SCALE
DATE:
DWG:



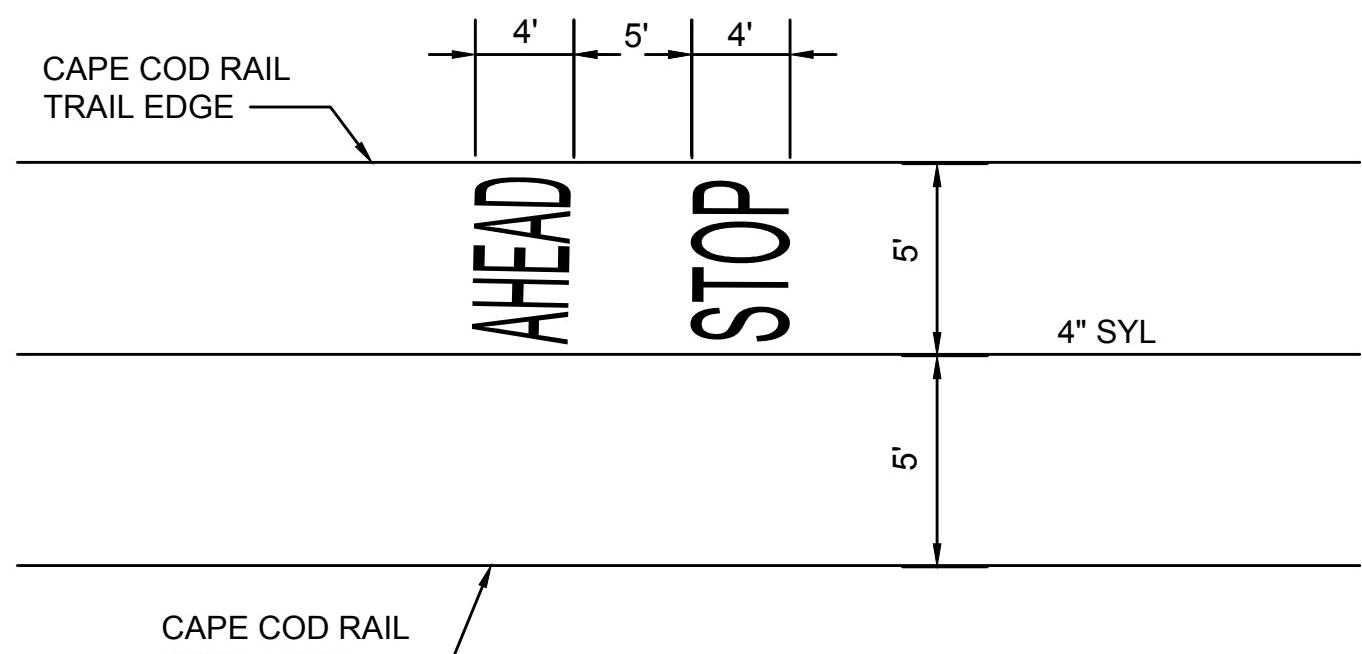
SPLIT RAIL WOOD FENCE

SCALE: NOT TO SCALE
S-STD.
H-STD.



ROADWAY BICYCLE PAVEMENT MARKINGS

SCALE: NOT TO SCALE
DATE:
DWG:



CAPE COD RAIL TRAIL PAVEMENT MARKINGS

SCALE: NOT TO SCALE
DATE:
DWG:

- NOTES:
1. PAVEMENT MARKINGS AS PER MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
 2. PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.

- NOTES:
1. PAVEMENT MARKINGS AS PER MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
 2. PAVEMENT MARKINGS SHALL BE REFLECTIVE PAINT.

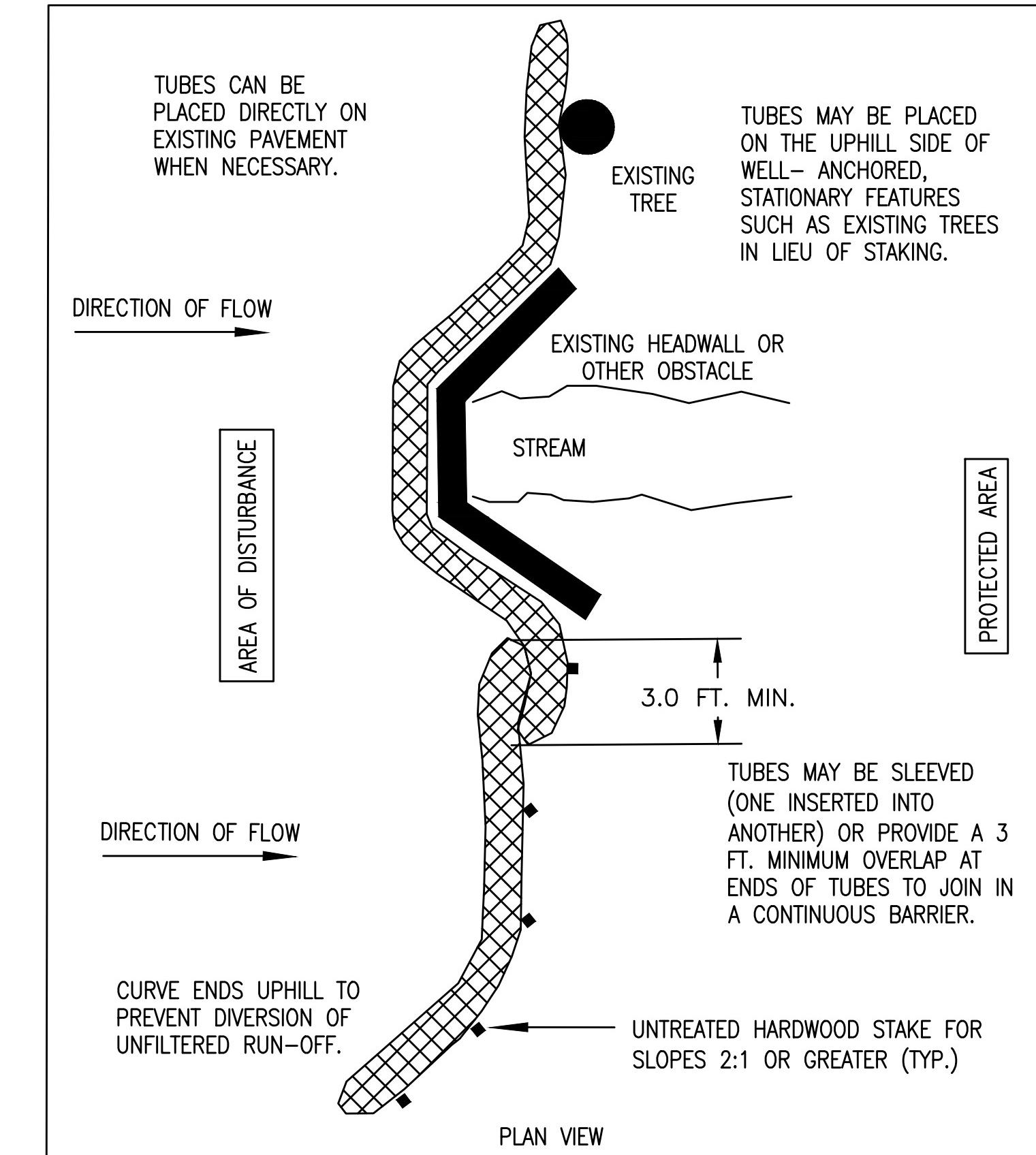
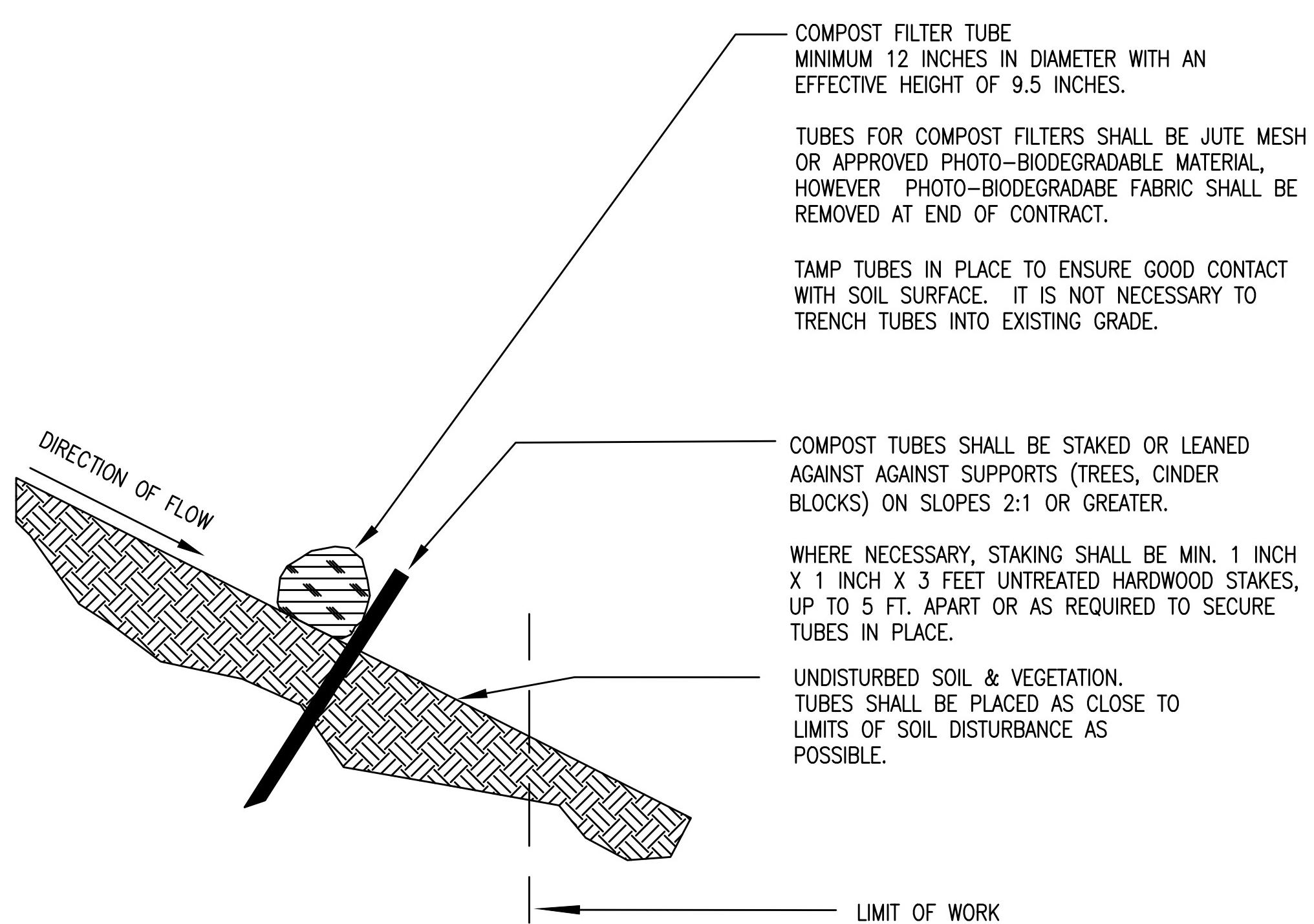
YARMOUTH & DENNIS
CAPE COD RAIL TRAIL EXTENSION - PHASE II

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	26	68
PROJECT FILE NO. 607571			

CONSTRUCTION DETAILS

Plotted on 25-Aug-2016 1:19PM

607571HD (DET).DWG

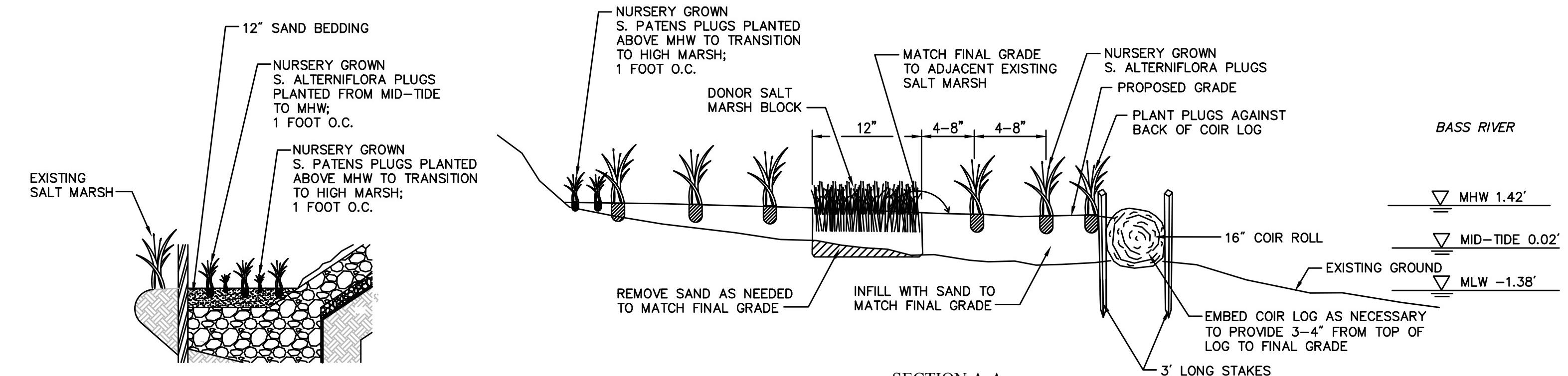


- GENERAL NOTES:**
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
 2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
 3. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
 4. DO NOT INSTALL IN PERENNIAL, Ephemeral OR INTERMITTENT STREAMS.
 5. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
 6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.

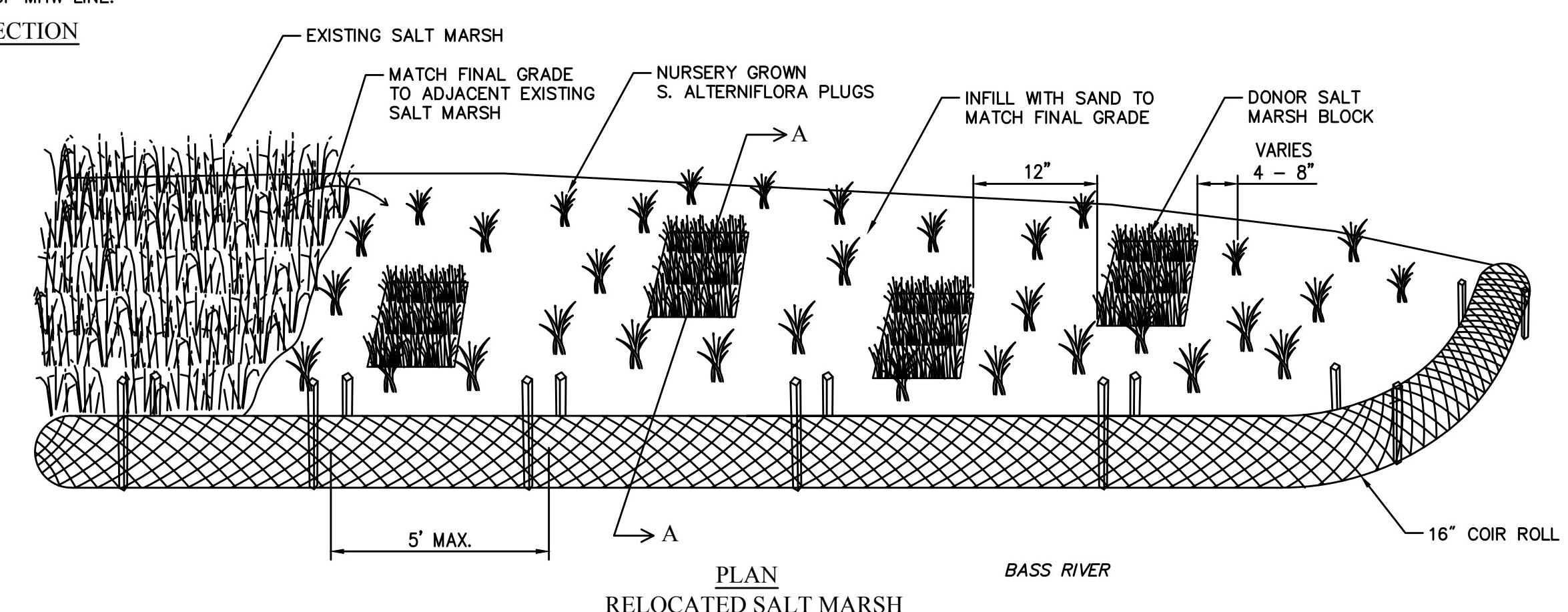
COMPOST FILTER TUBE

SCALE: NOT TO SCALE

DATE: 6-13-2014 (MASSDOT)

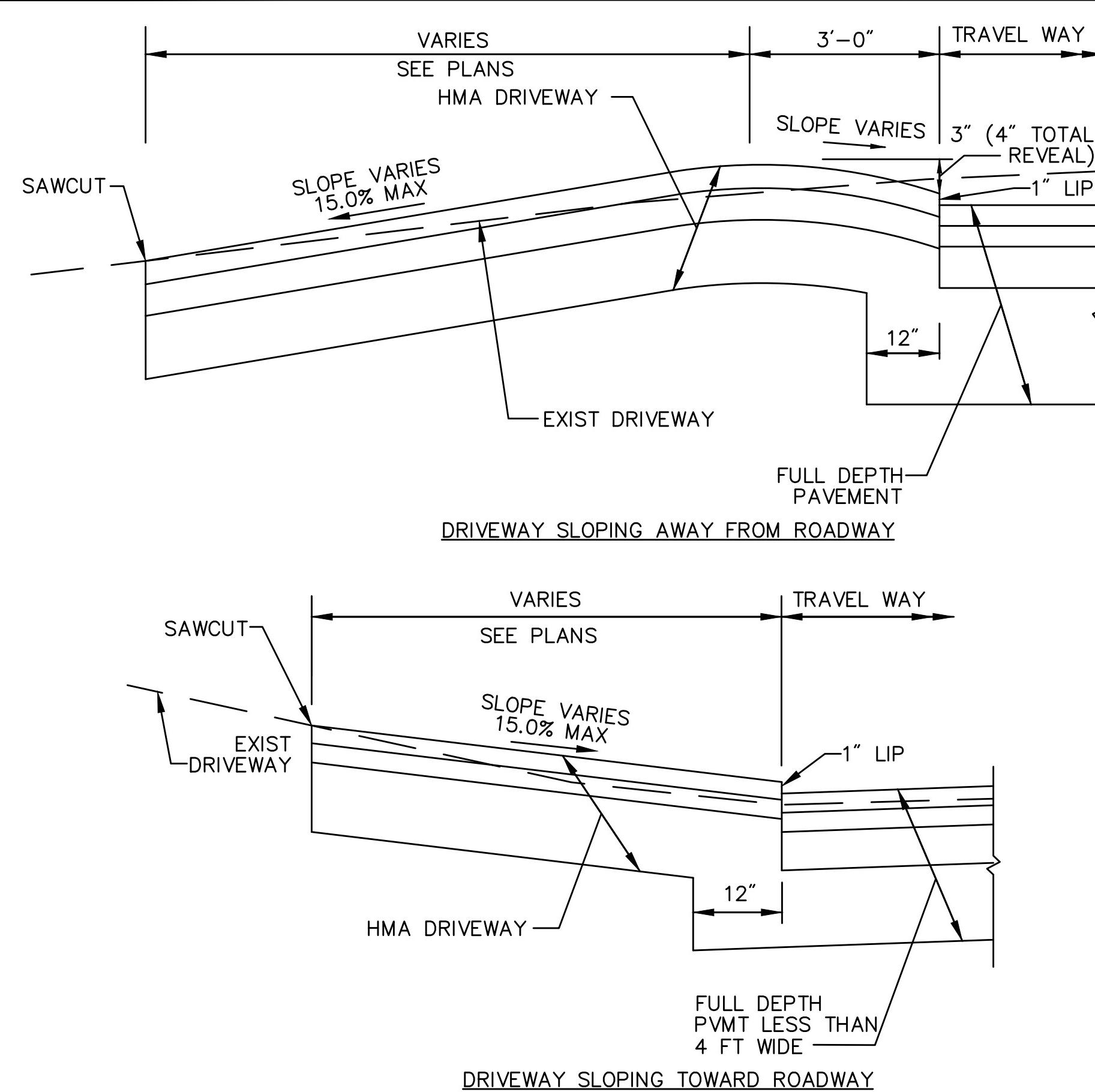


NOTE: SALT MARSH GRADING AND PLANTING TO BE CONDUCTED AT THE DIRECTION OF THE WETLAND SPECIALIST.



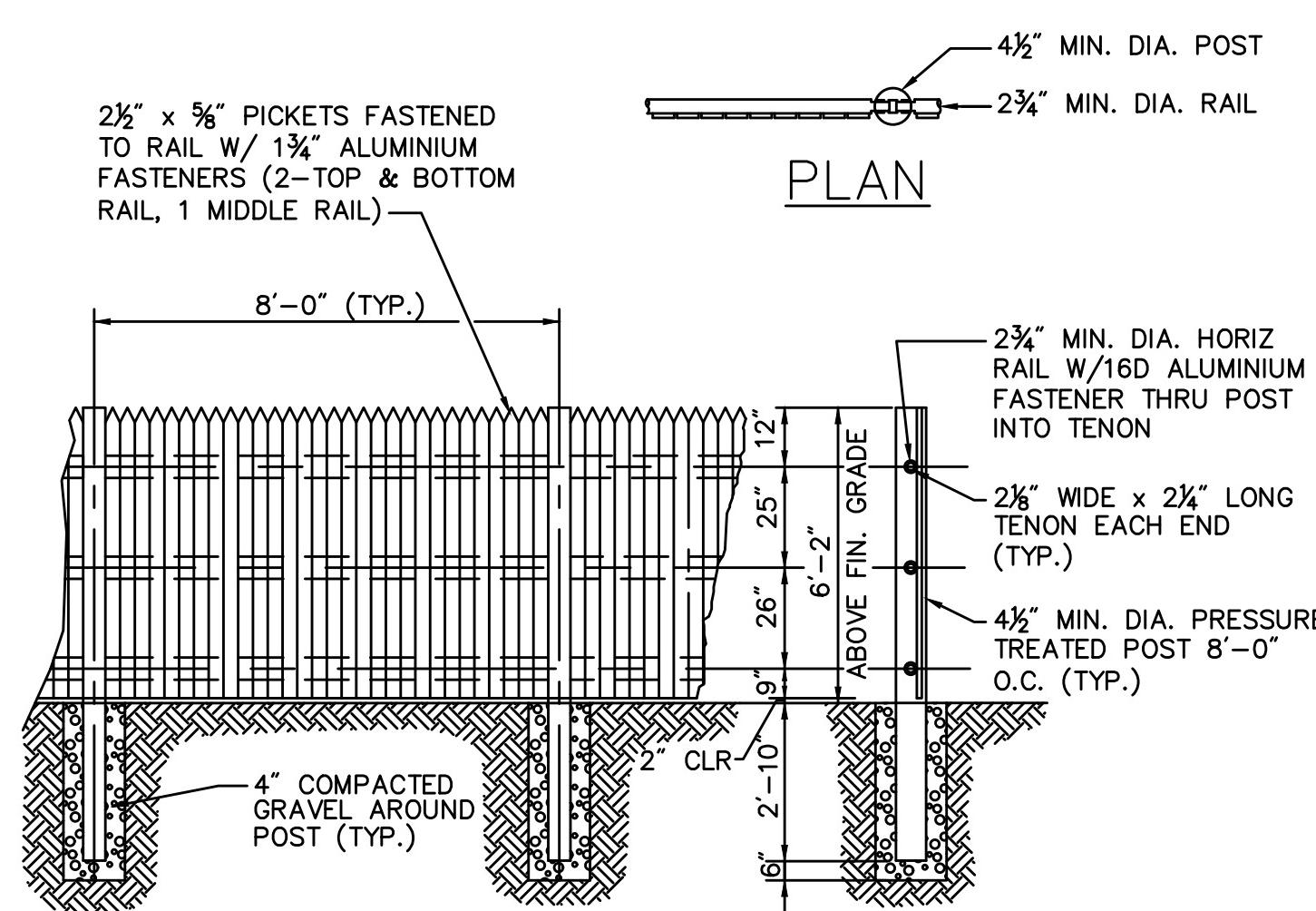
SALT MARSH MITIGATION PLAN

SCALE: NTS



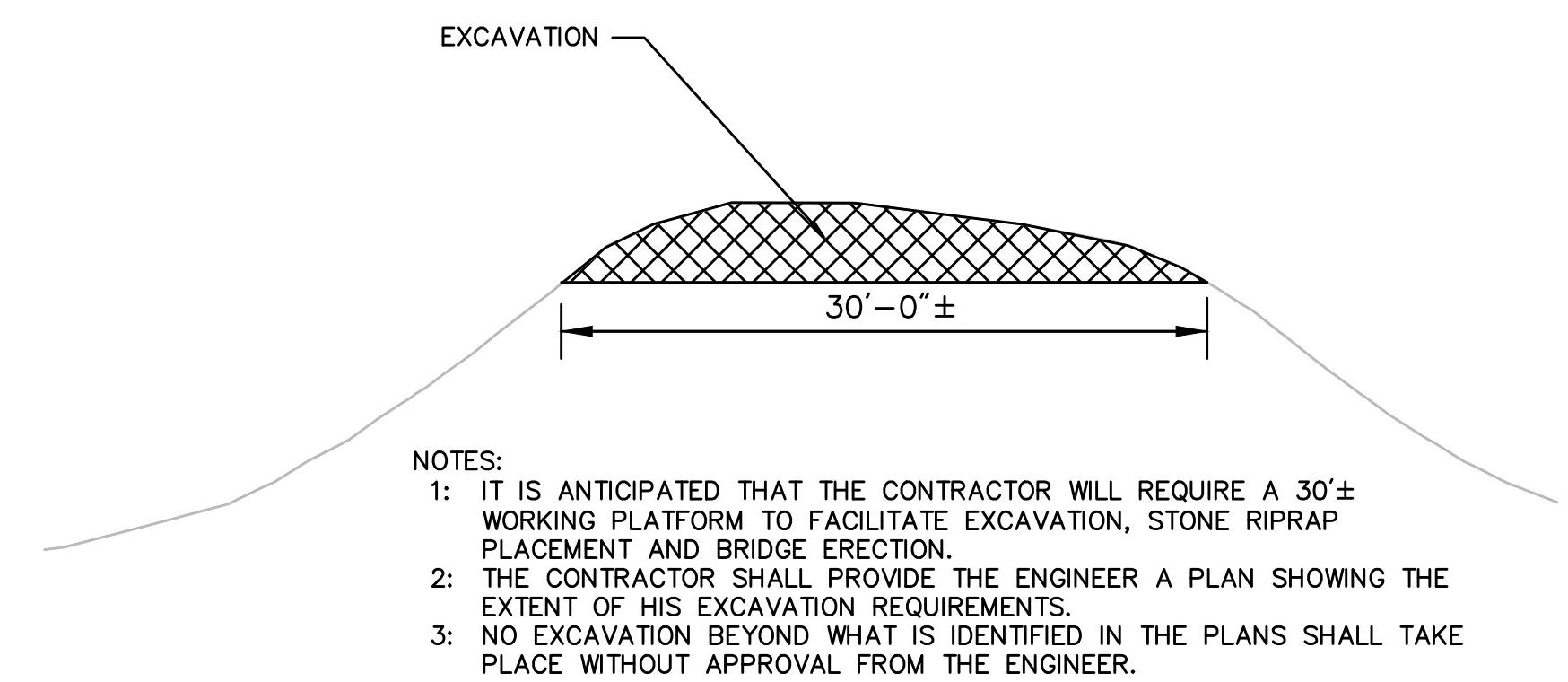
TYPICAL HMA DRIVEWAY SECTION WITHOUT SIDEWALK

SCALE: NOT TO SCALE
DATE:
DWG:



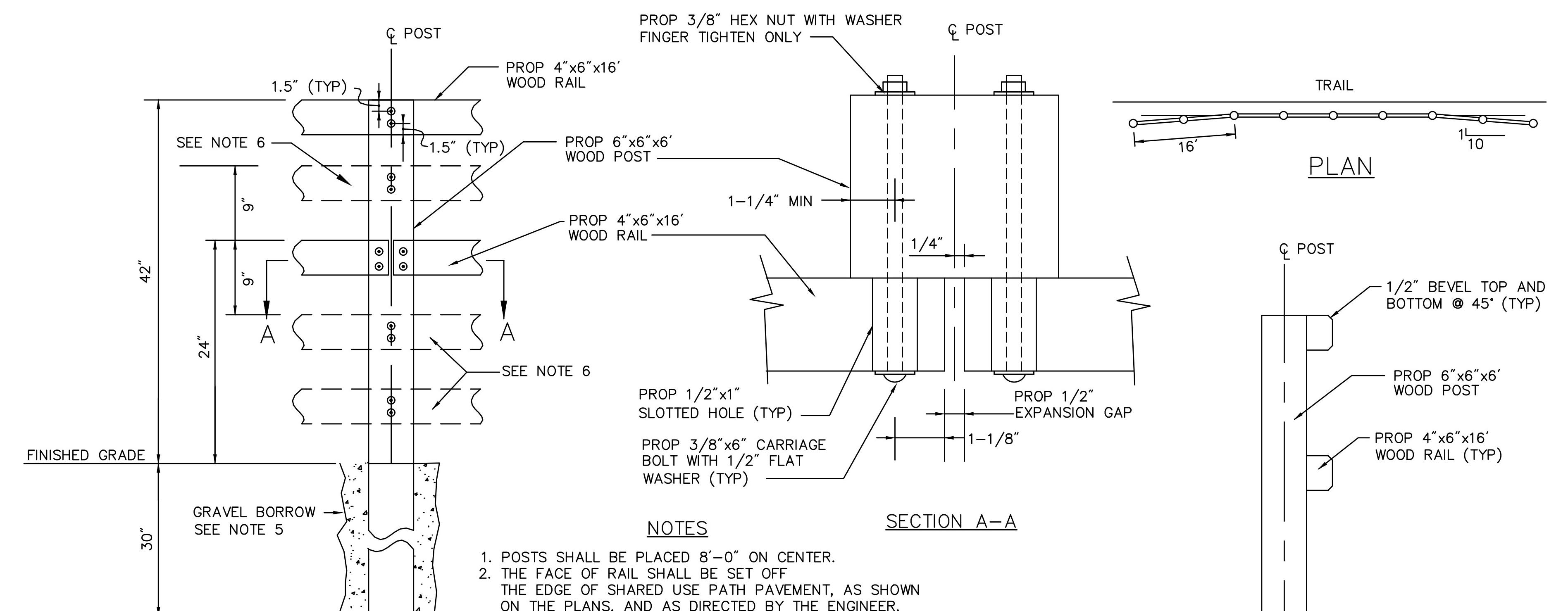
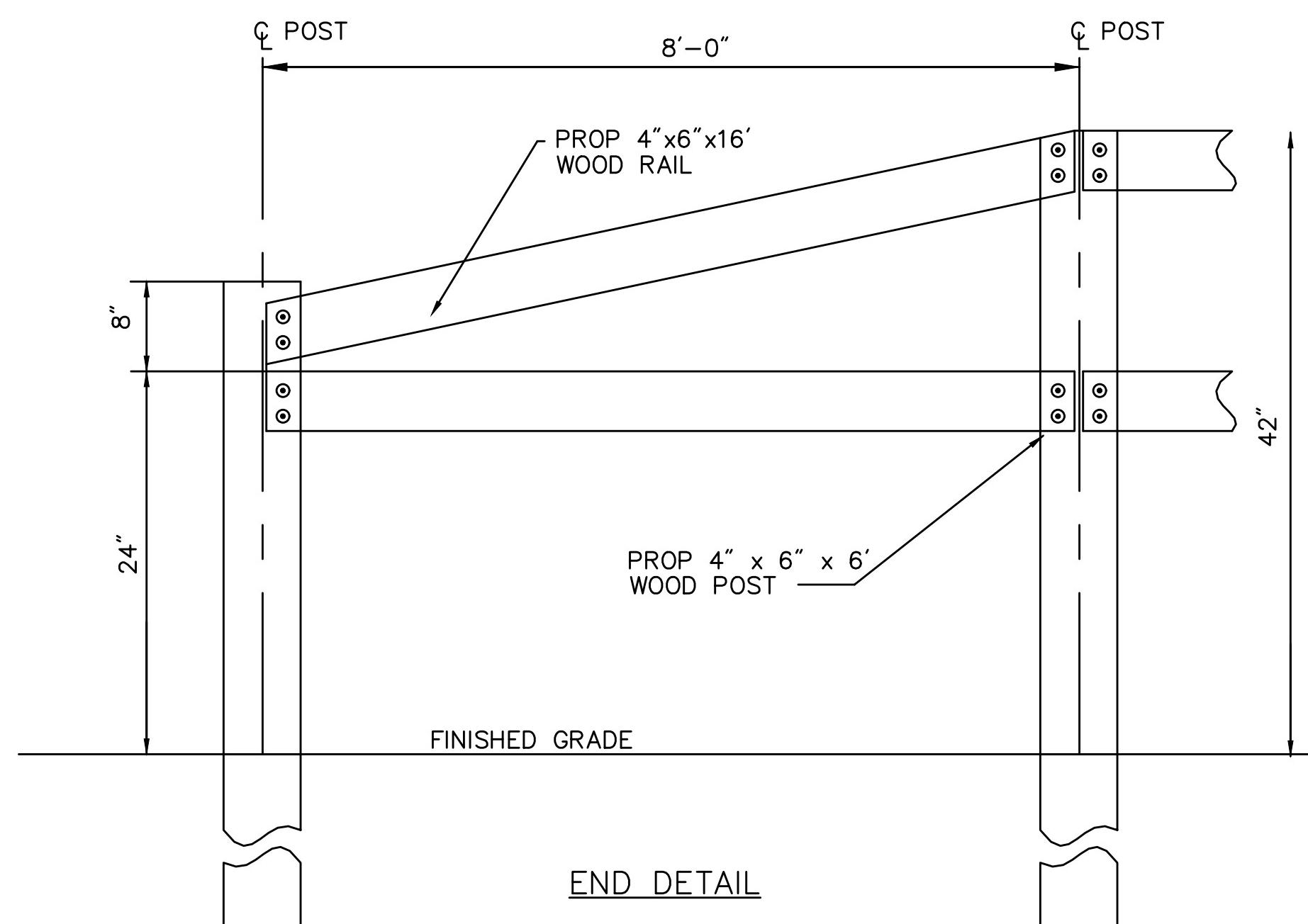
6' STOCKADE FENCE

SCALE: NOT TO SCALE
DATE: JUNE 2008
DWG: LD-470



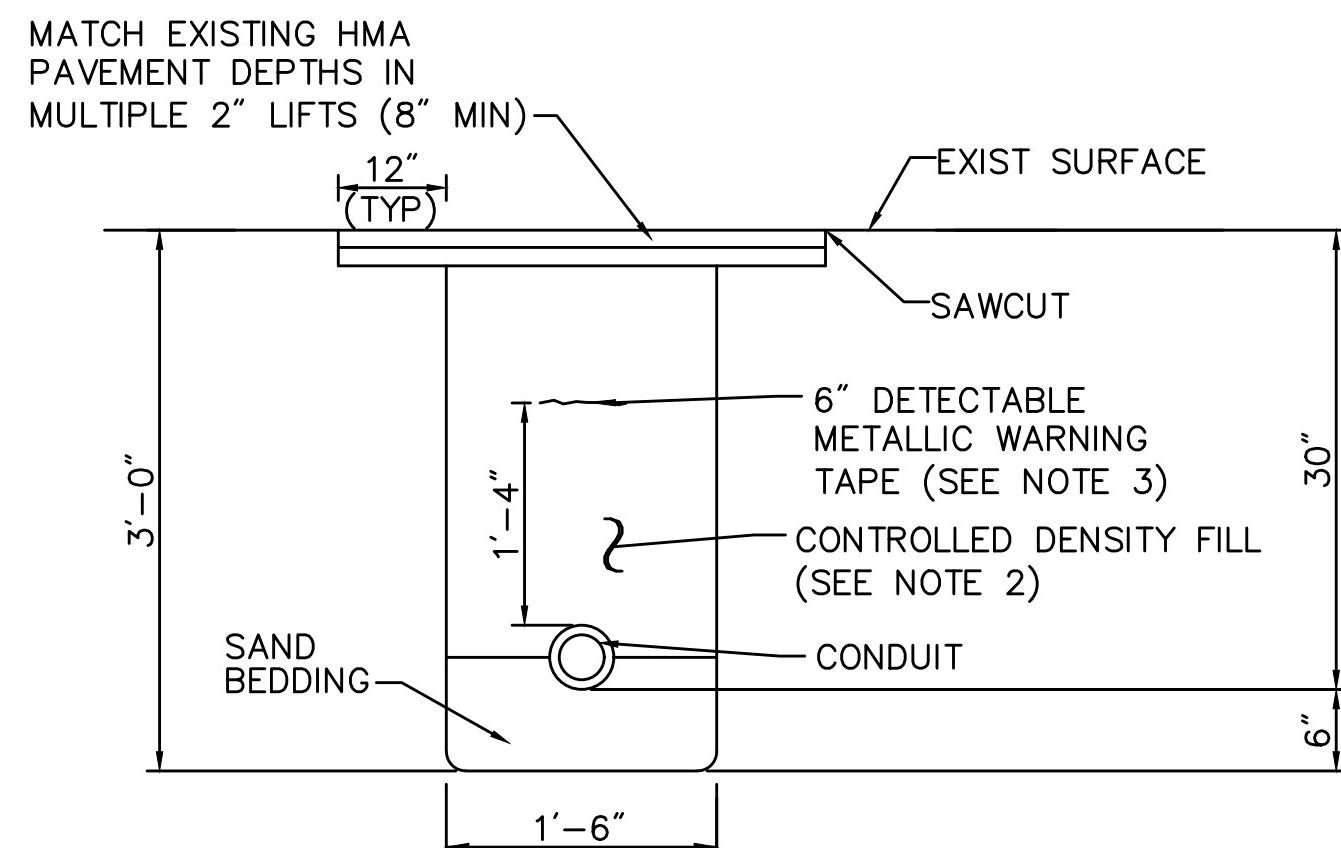
**PLATFORM & RAMP SYSTEM
BASS RIVER BRIDGE CONSTRUCTION**

SCALE: NOT TO SCALE
DATE:
DWG:



WOOD RAILING

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: GRD-06

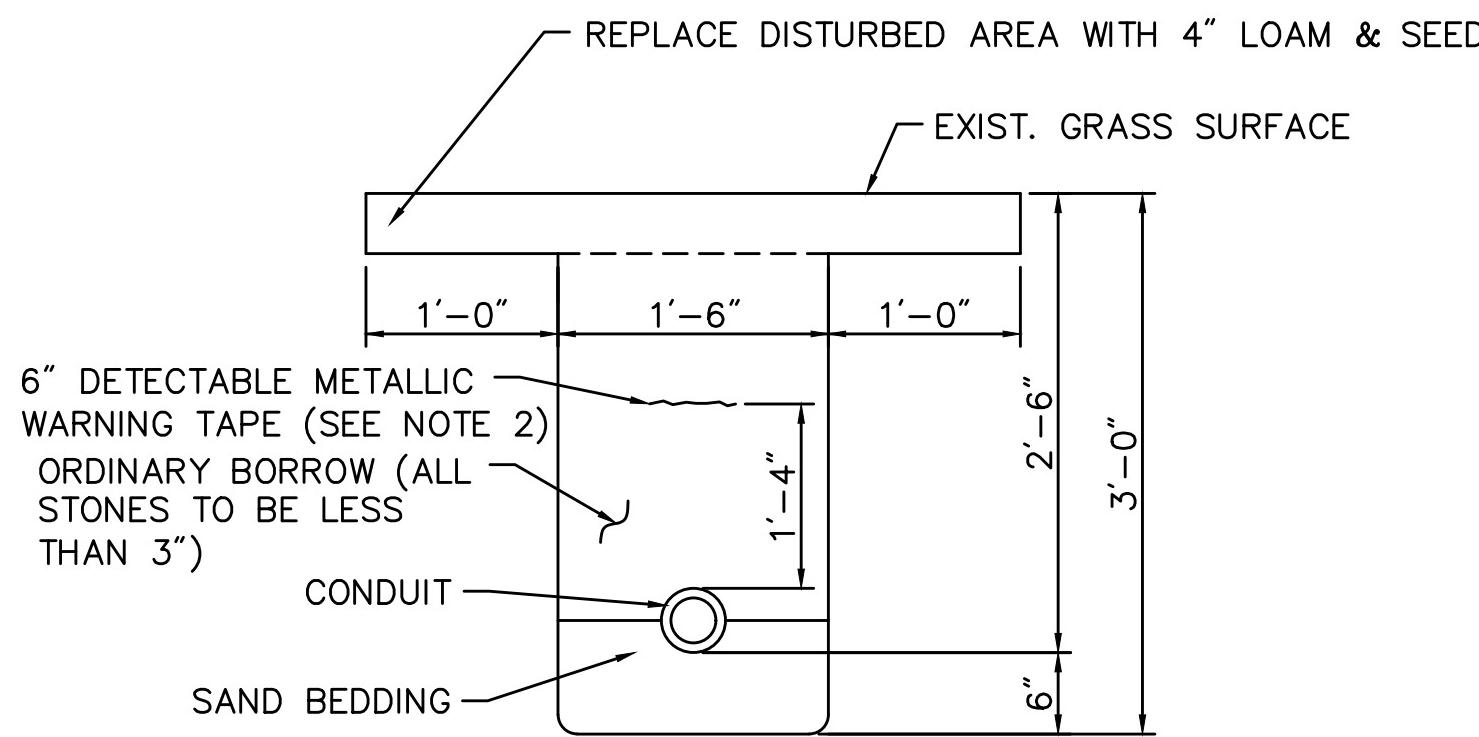


NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL), WITH PULL ROPE, UNLESS OTHERWISE APPROVED BY MASSDOT.
2. CONTROL DENSITY FILL SHALL MEET THE REQUIREMENTS OF SUBSECTION M4.08.0
3. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS.

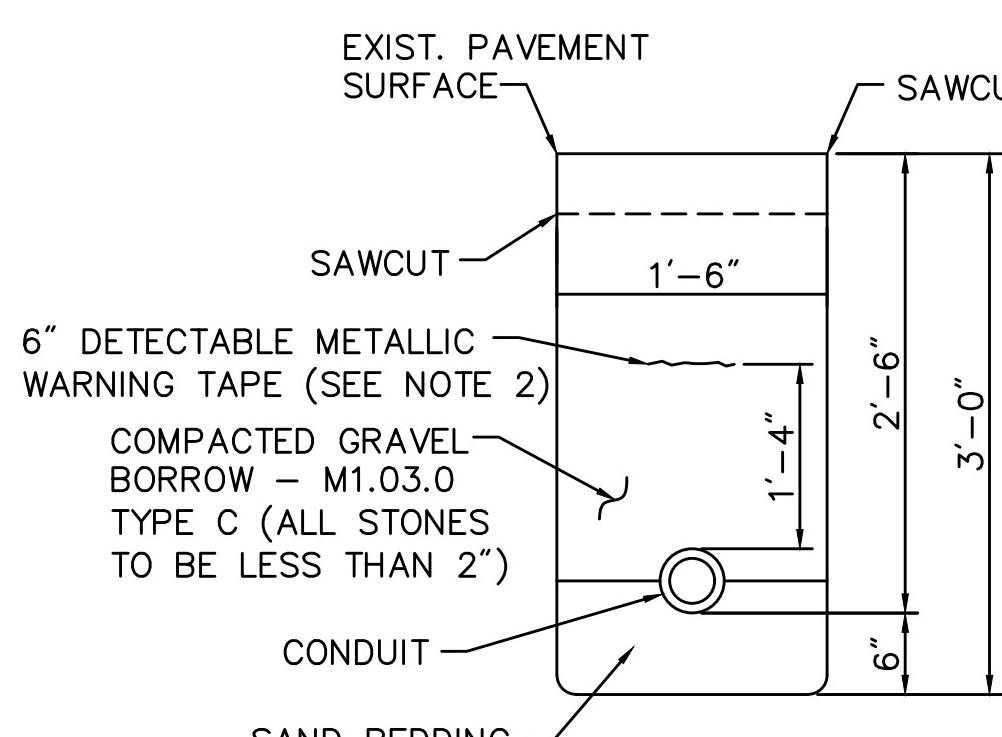
CONDUIT CROSSING ROADWAY

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: TRENCH-01



NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT NM-PLASTIC (UL), WITH PULL ROPE, UNLESS OTHERWISE APPROVED BY MASSDOT.
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDARD.

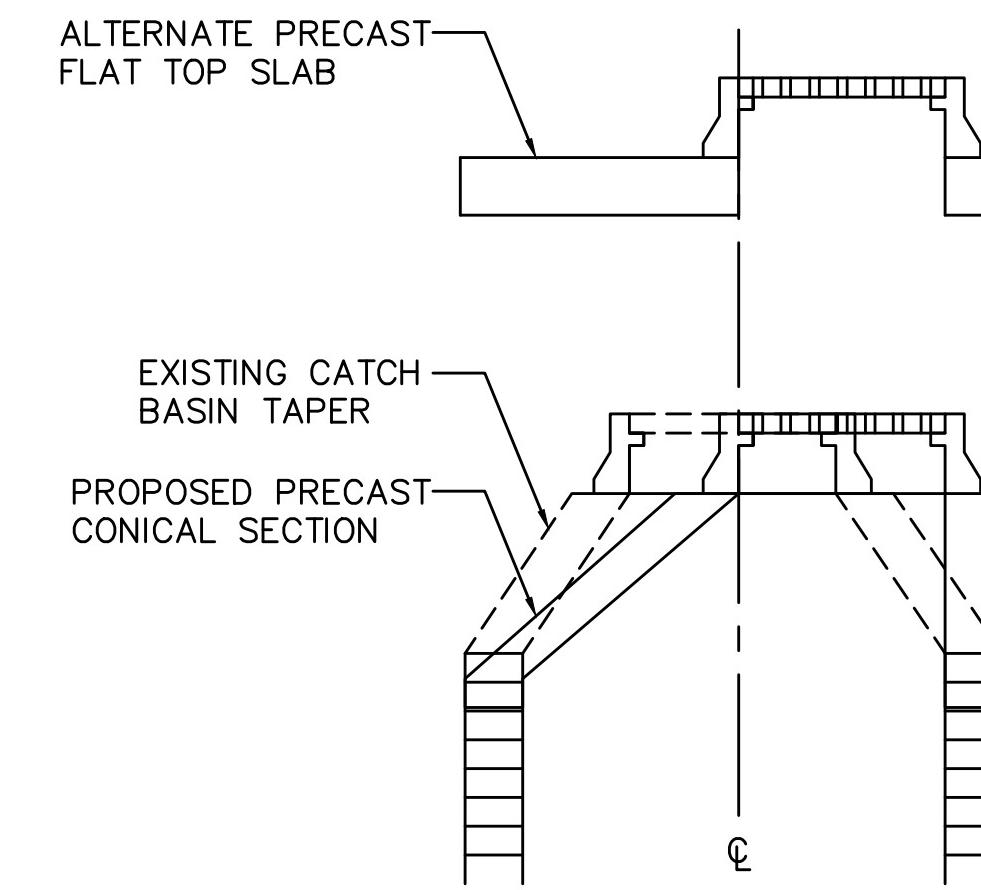


NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT NM-PLASTIC (UL), WITH PULL ROPE, UNLESS OTHERWISE APPROVED BY MASSDOT.
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDARD.

CONDUIT UNDER SIDEWALK/GRASS AREAS

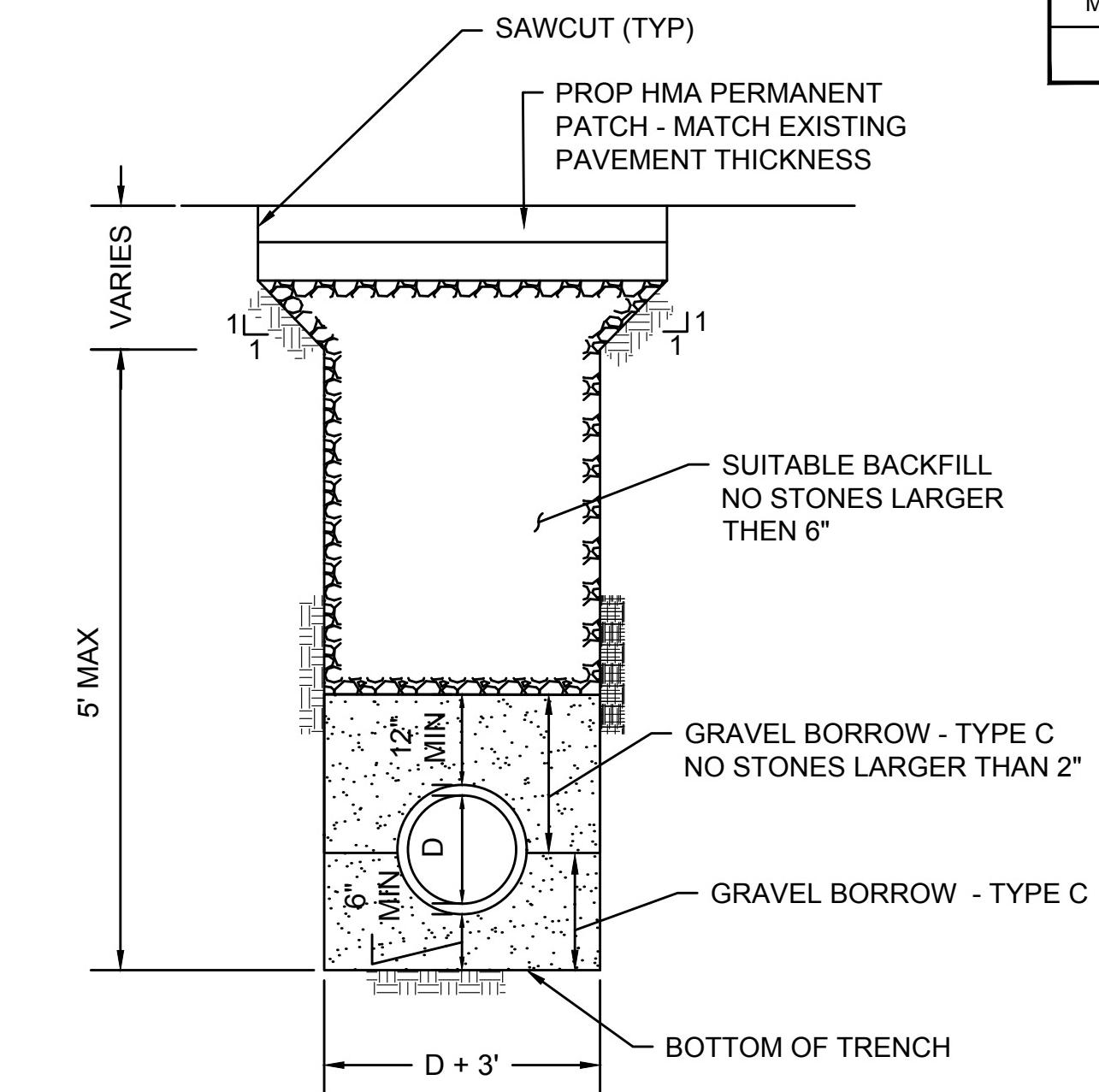
SCALE: NOT TO SCALE
DATE: -
DWG: -



NOTE:
BASED ON ACTUAL FIELD CONDITIONS; THE CONTRACTORS SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.

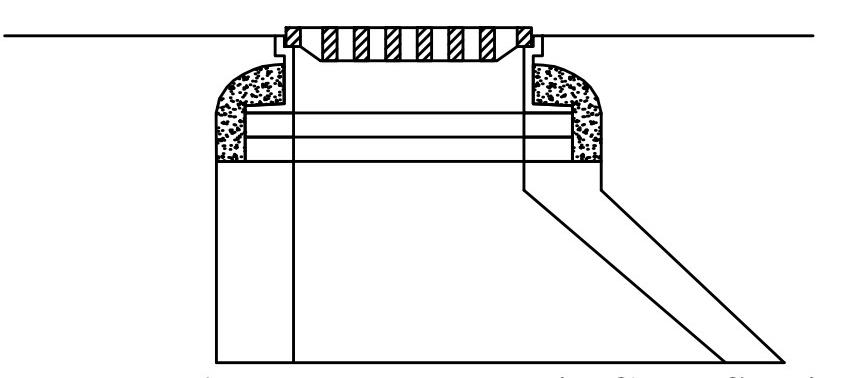
DRAINAGE STRUCTURE REMODEL

SCALE: NTS



TRENCH DETAIL

SCALE: NOT TO SCALE
TRENCH-05
MARCH 2013



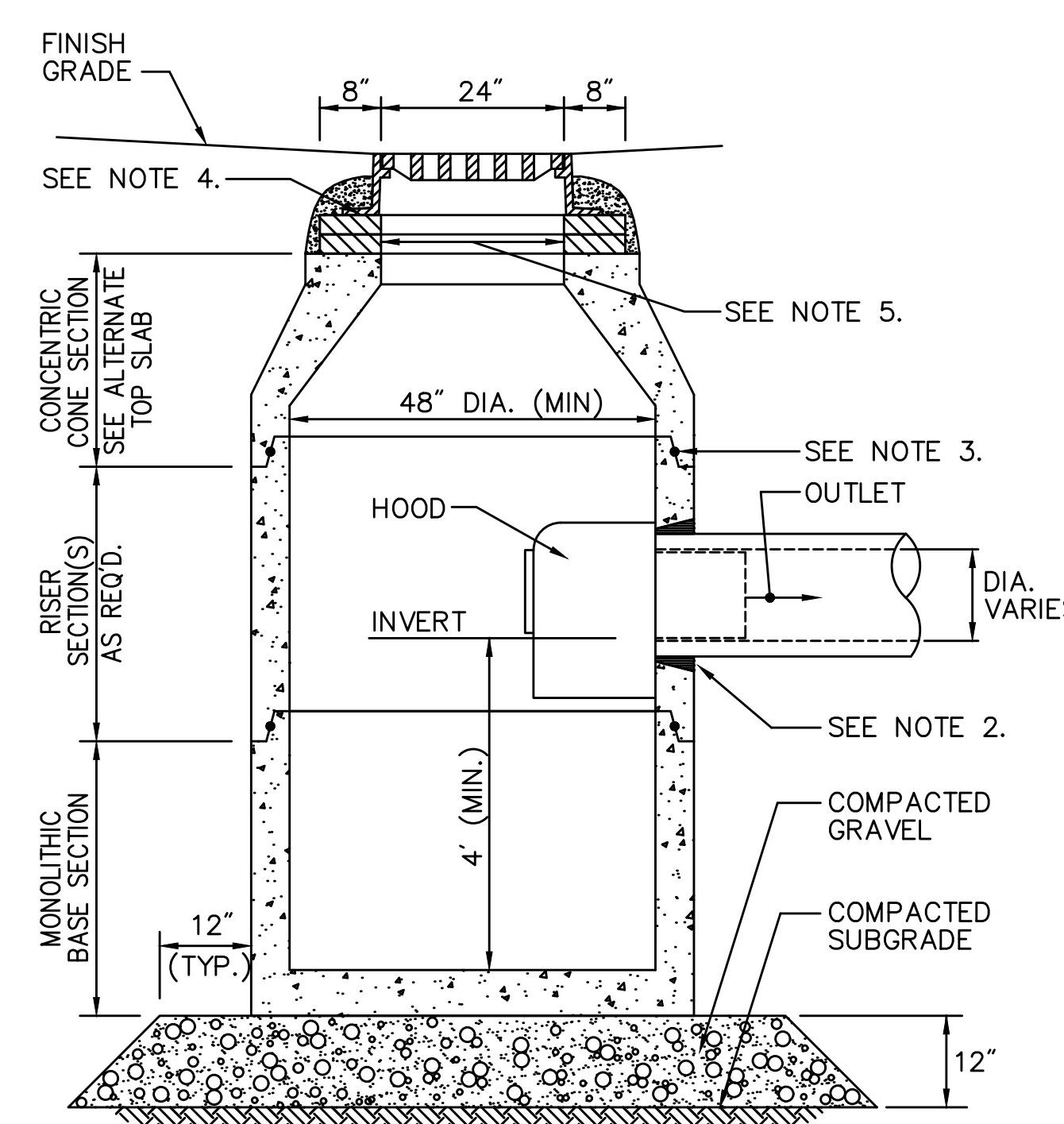
Alternate Eccentric Cone Section



Alternate Top Slab

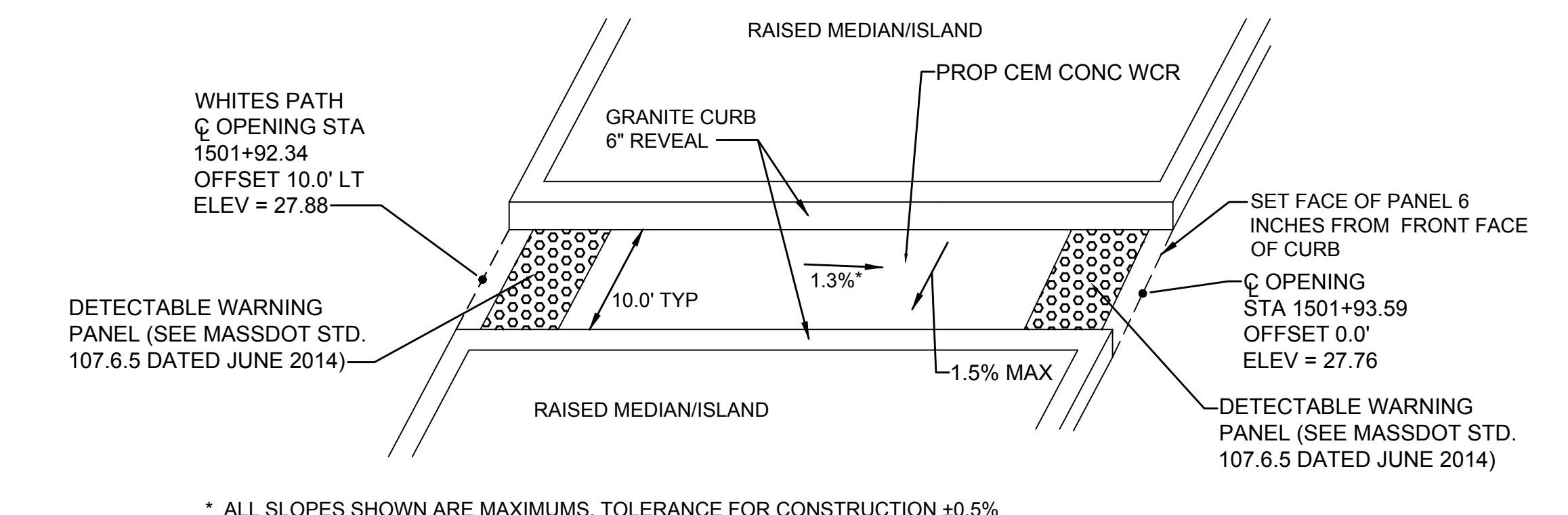
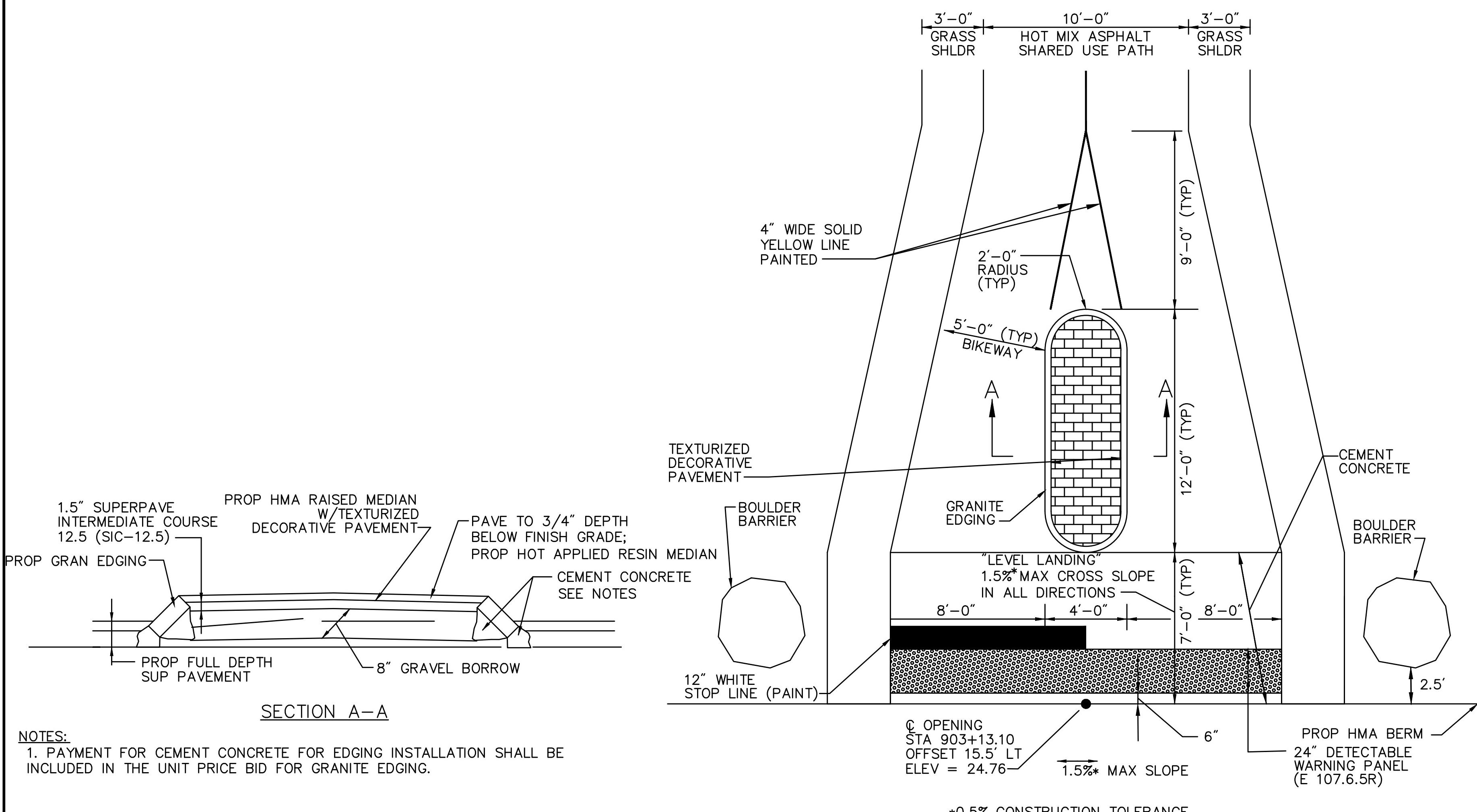
Notes:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).
5. OPENING IN TOP SLAB SHALL BE 24"x27" FOR CATCH BASINS WITH CURB INLETS. OPENING SHALL BE 24"x24" AT ALL OTHER LOCATIONS.



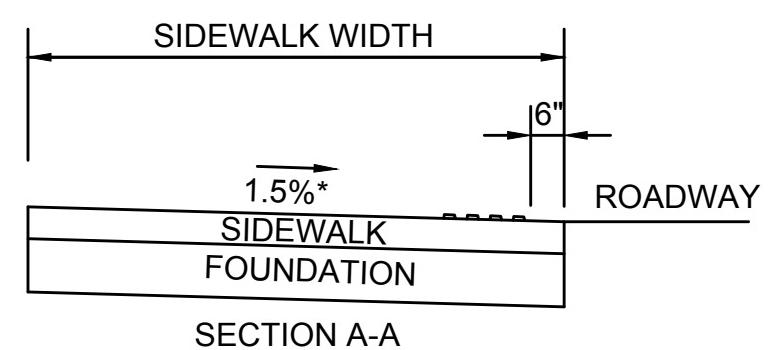
CATCH BASIN

SCALE: NOT TO SCALE
DATE: 10-28-2008
DWG: -



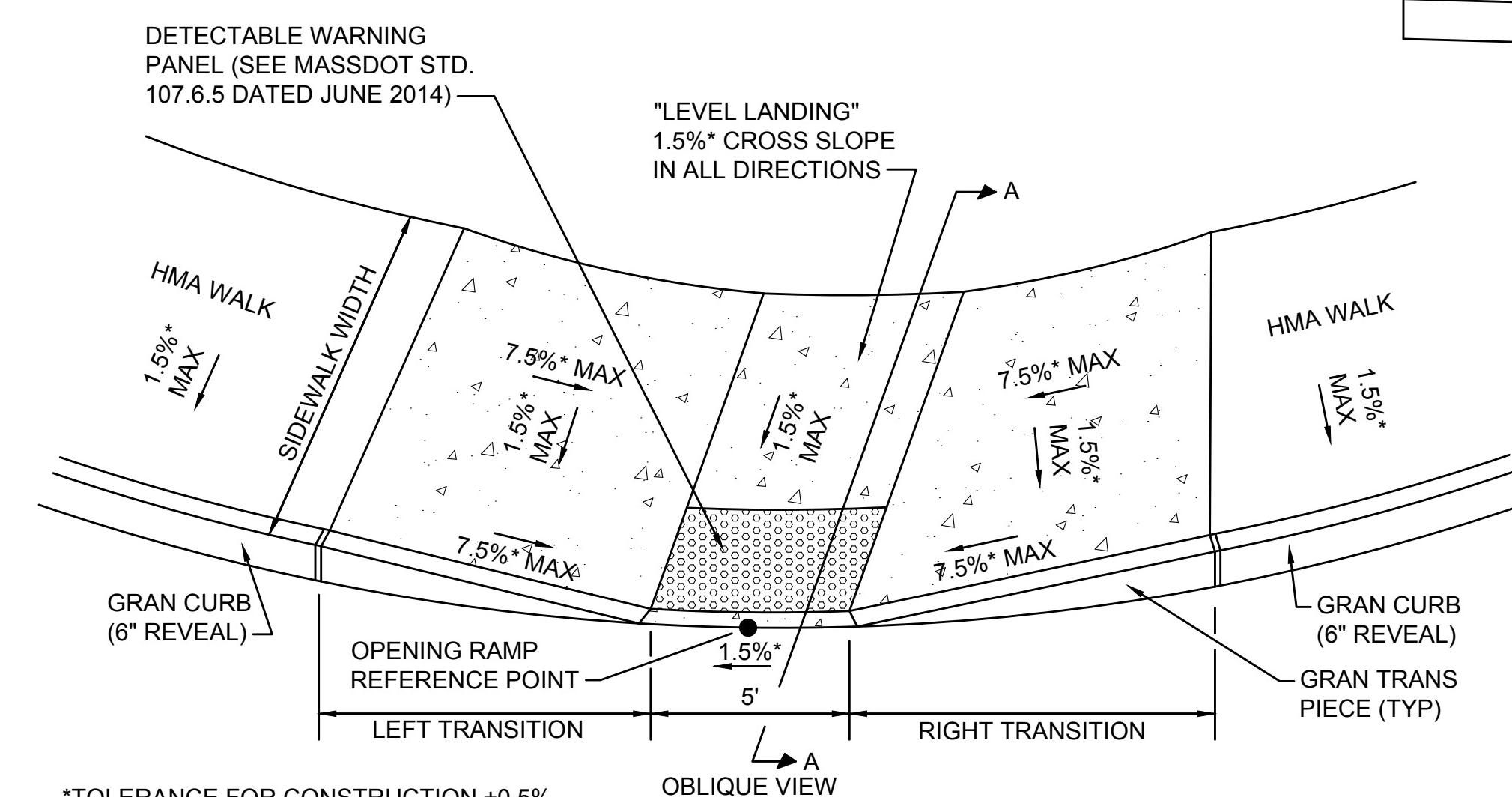
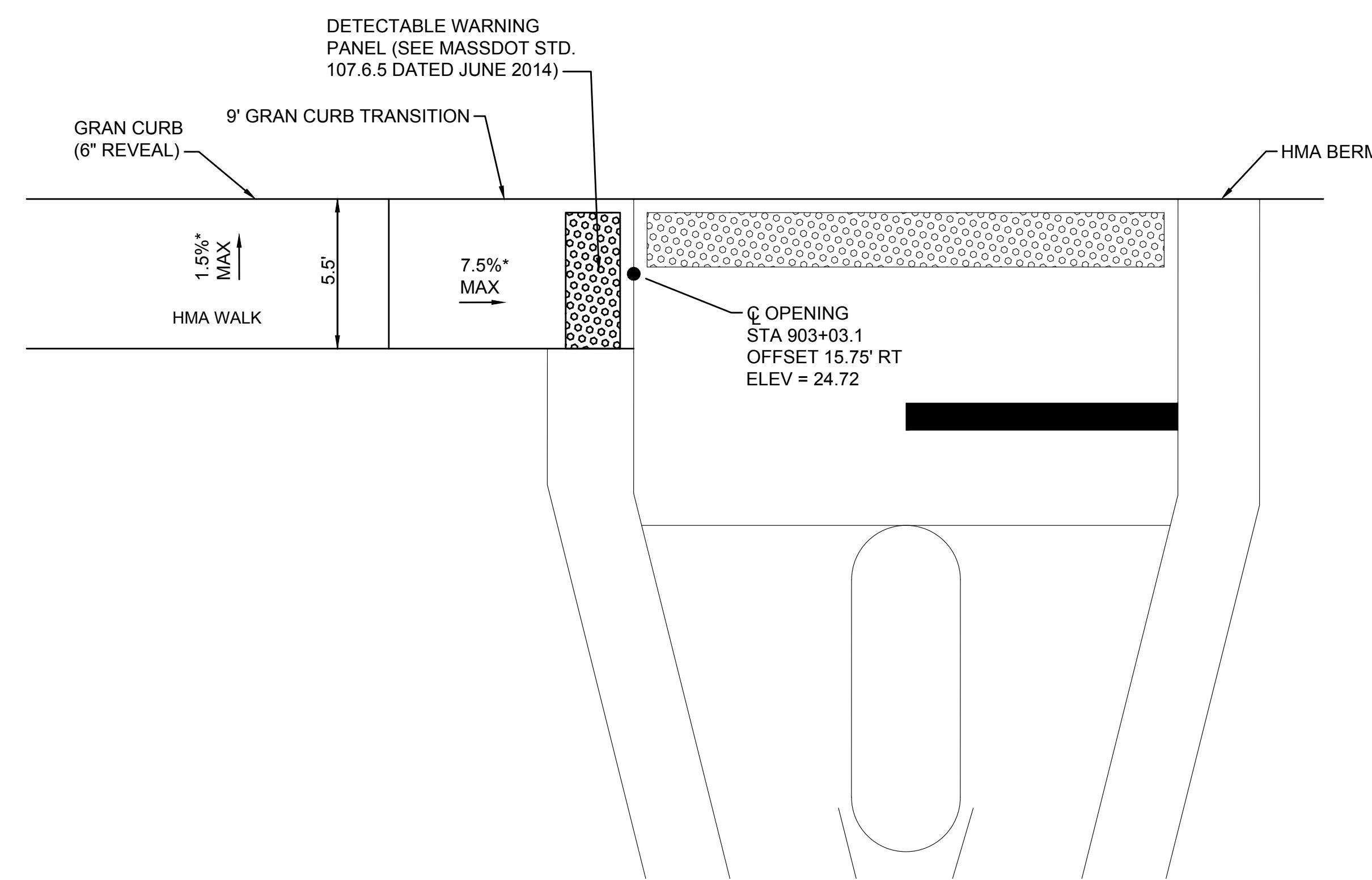
WHEELCHAIR RAMP 4

SCALE: NTS



SPLITTER ISLAND AND SHARED USE PATH WHEELCHAIR RAMP [3]

SCALE: NOT TO SCALE
DATE: DEC 2005
DWG:



WHEELCHAIR RAMP LESS THAN 6' WIDE

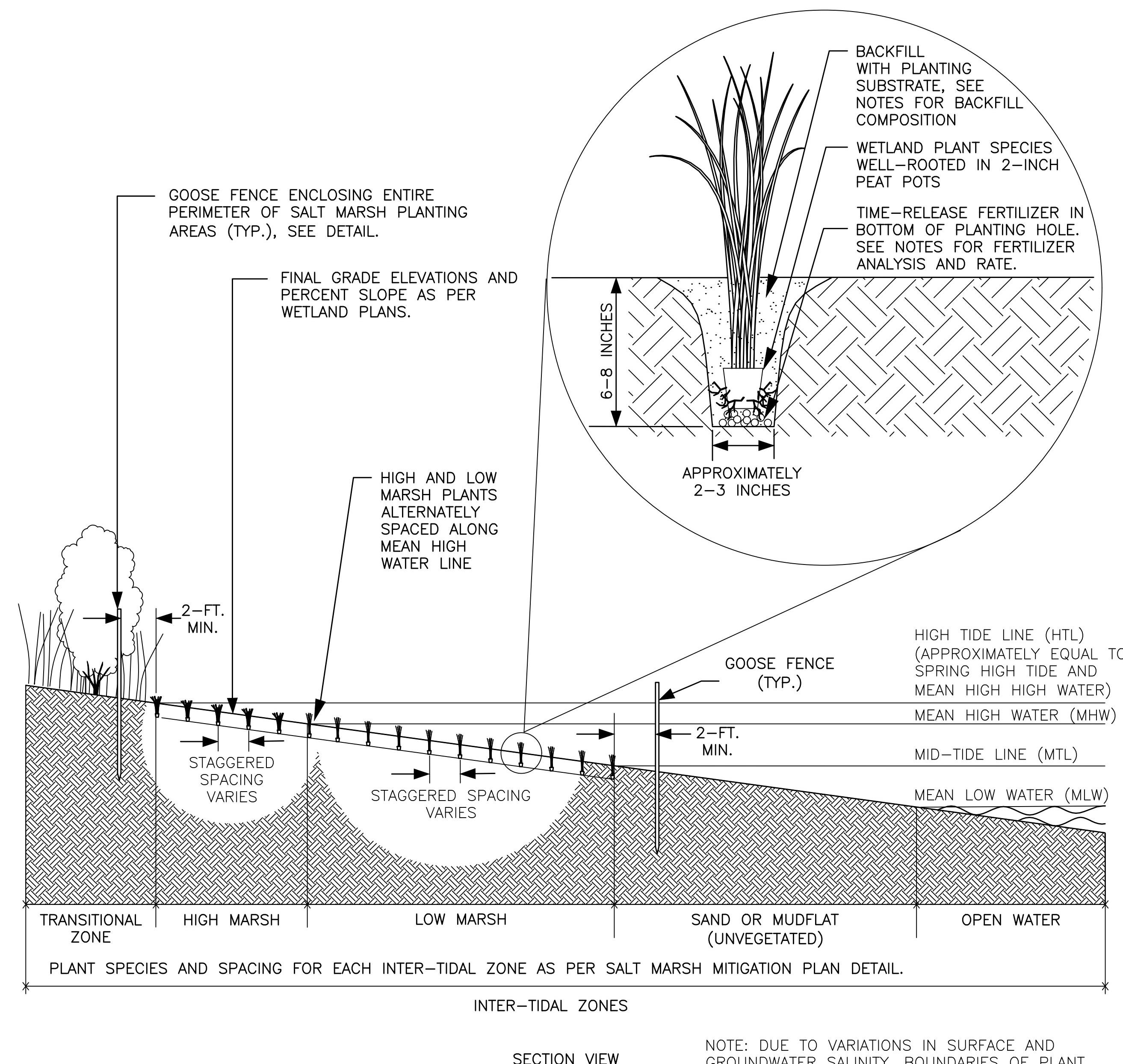
SCALE: NTS

NO.	LOCATION	SIDEWALK WIDTH	LEFT SIDE		RIGHT SIDE		OPENING ELEV
			ROADWAY GUTTER	REVEAL TRANS	ROADWAY GUTTER	REVEAL TRANS	
[1]	1501+80.2 48.2' LT	5'-6"	-13.2%	6"	6'-6"	7.5%	6" 15'-0" 28.7'
[2]	1501+95.7 37.1' RT	5'-6"	2.98%	6"	11'-0"	3.2%	6" 6'-6" 27.1'

NOTE: NEGATIVE (-) ROADWAY GUTTER SLOPE DENOTES A LOW SIDE TRANSITION.

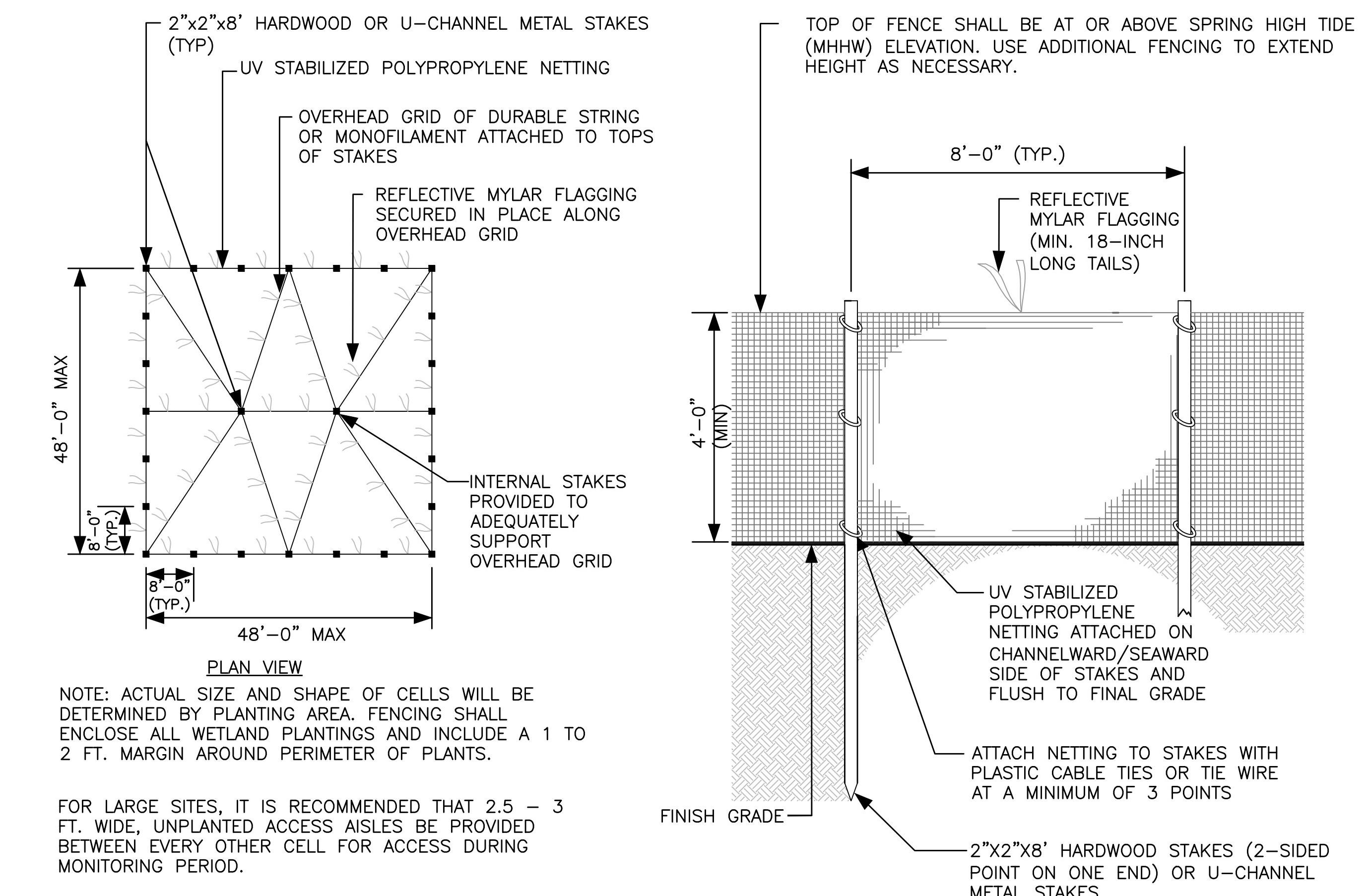
WHEELCHAIR RAMP 5

SCALE: NTS



TYPICAL TIDAL WETLAND PLANTING

SCALE: NTS



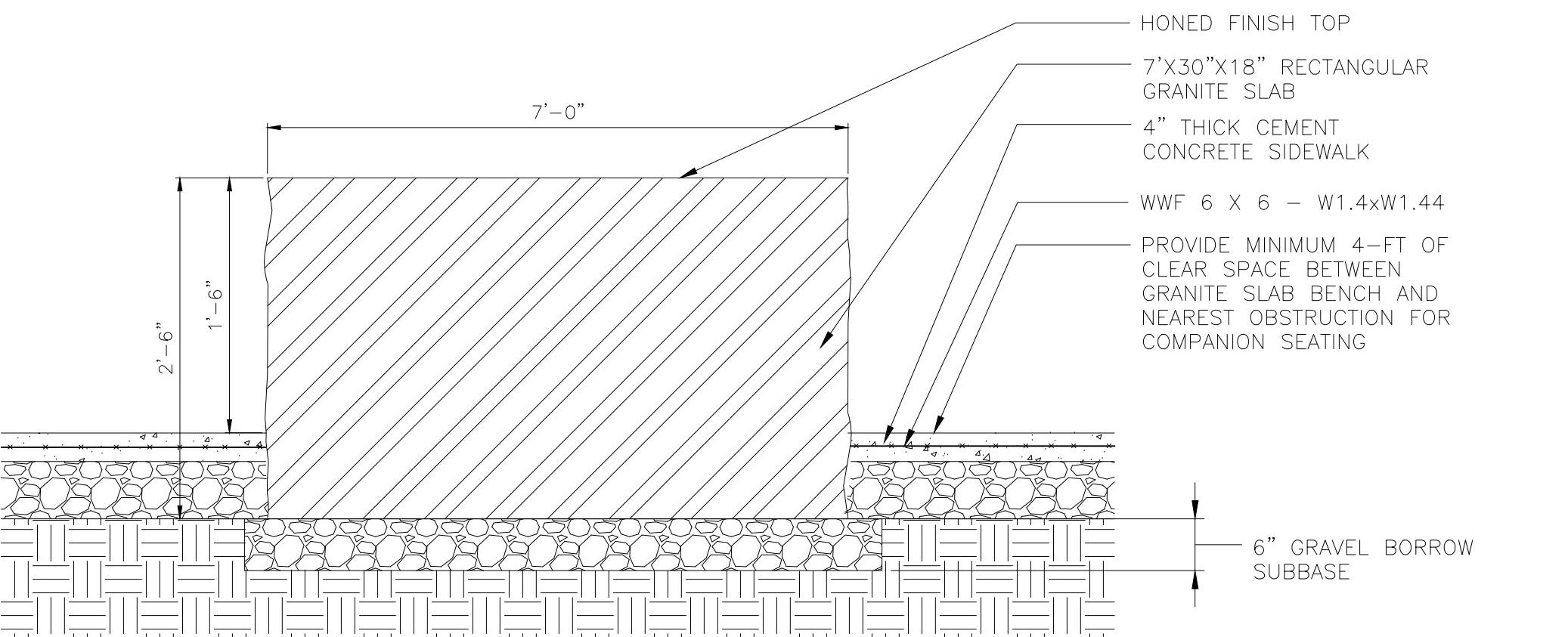
TYPICAL GOOSE FENCE

SCALE: NTS

YARMOUTH & DENNIS CAPE COD RAIL TRAIL EXTENSION - PHASE II

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	STP/TIP-002S(958)X	31	68
PROJECT FILE NO. 607571			

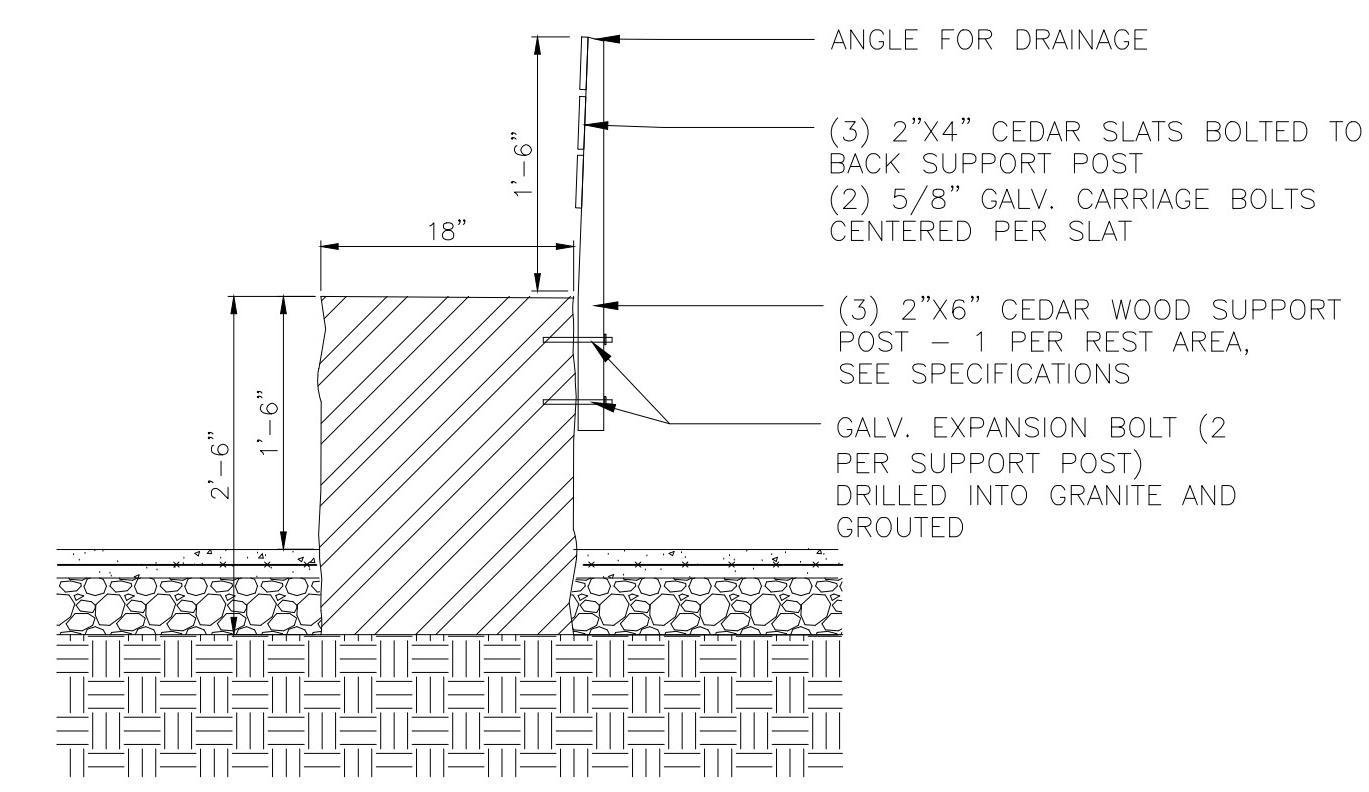
CONSTRUCTION DETAILS



**7-FT GRANITE SLAB BENCH
NOT TO SCALE**

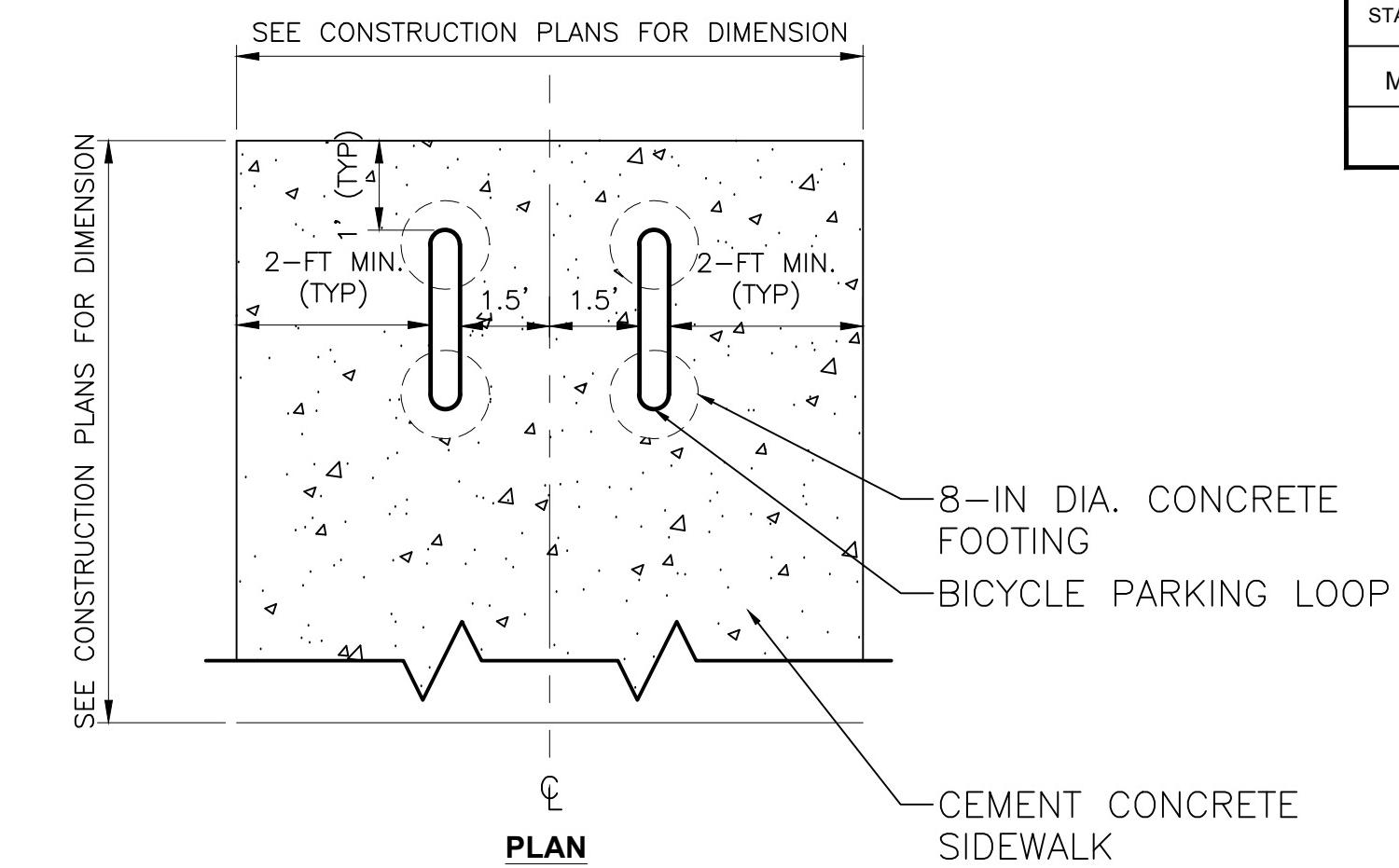
NOT

- EACH BENCH SHALL INCORPORATE 2.5 FT x 4 FT CLEARANCE ADJACENT TO NARROW END AS SHOWN ON DRAWINGS TO ACCOMMODATE ACCESSIBLE COMPANION SEATING.
 - ALL EXPOSED FACES, EXCEPT TOP, TO BE SPL. FACE WITH 1 INCH HONE CHAMFER

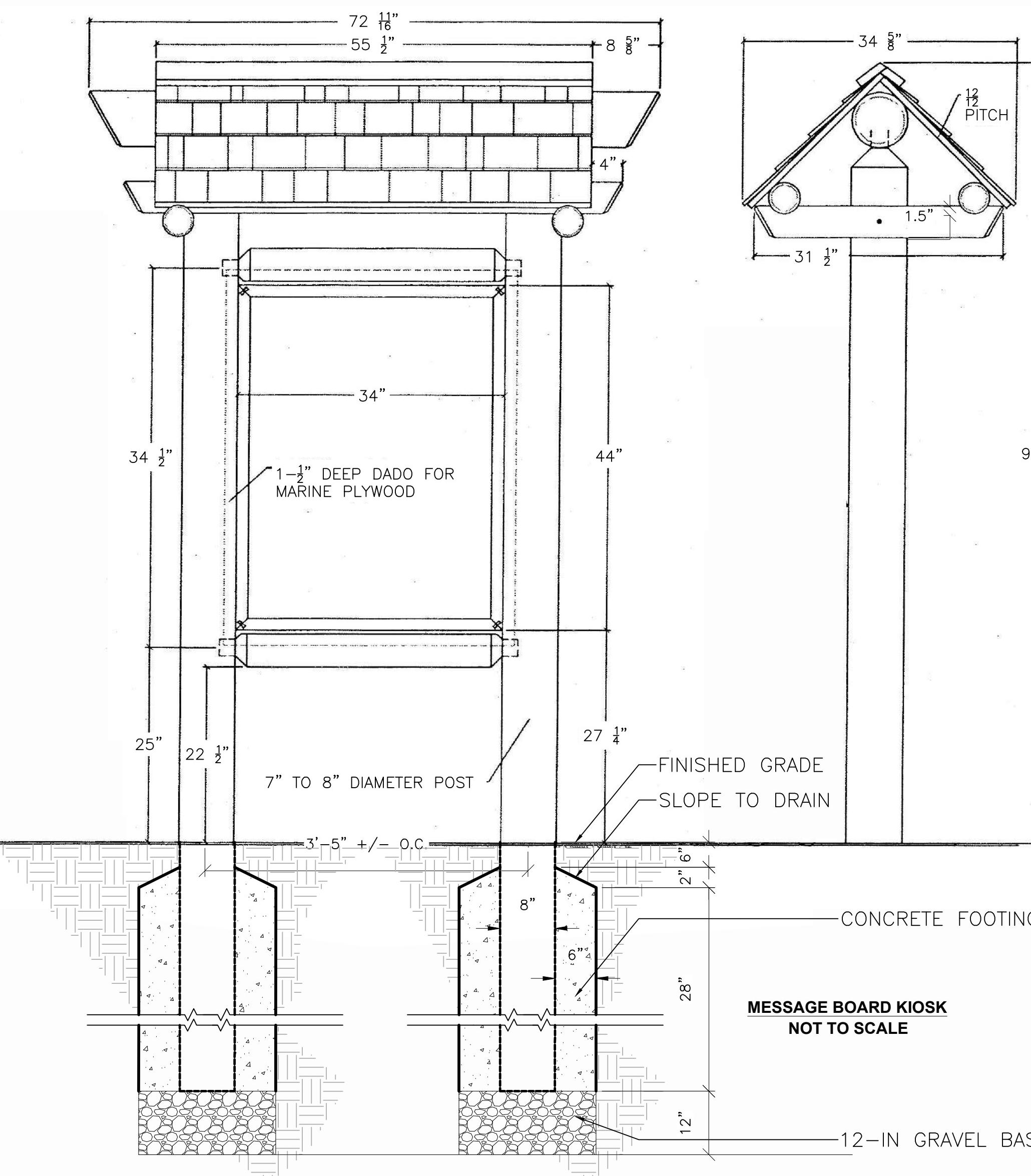


6-FT GRANITE SLAB BENCH BACKREST

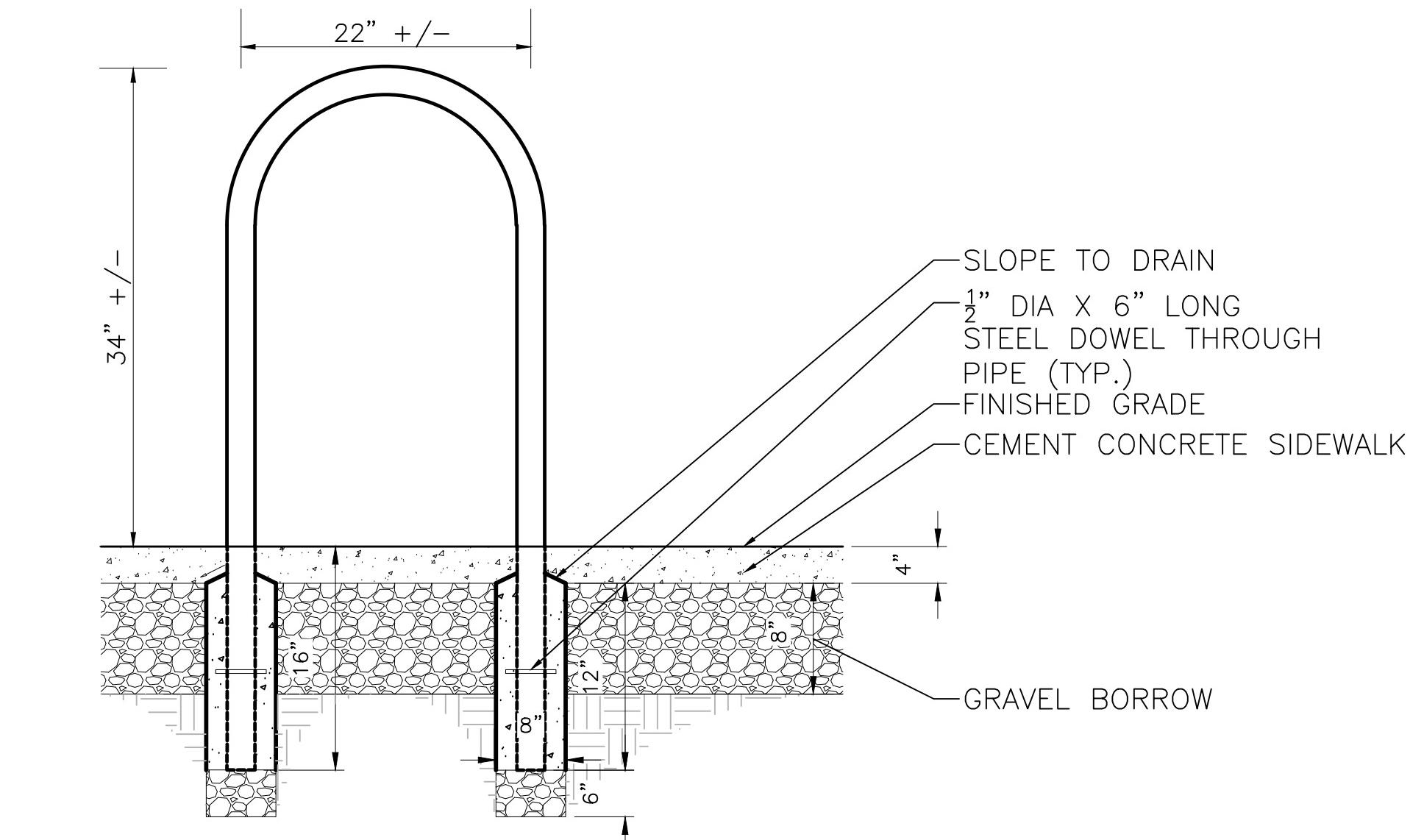
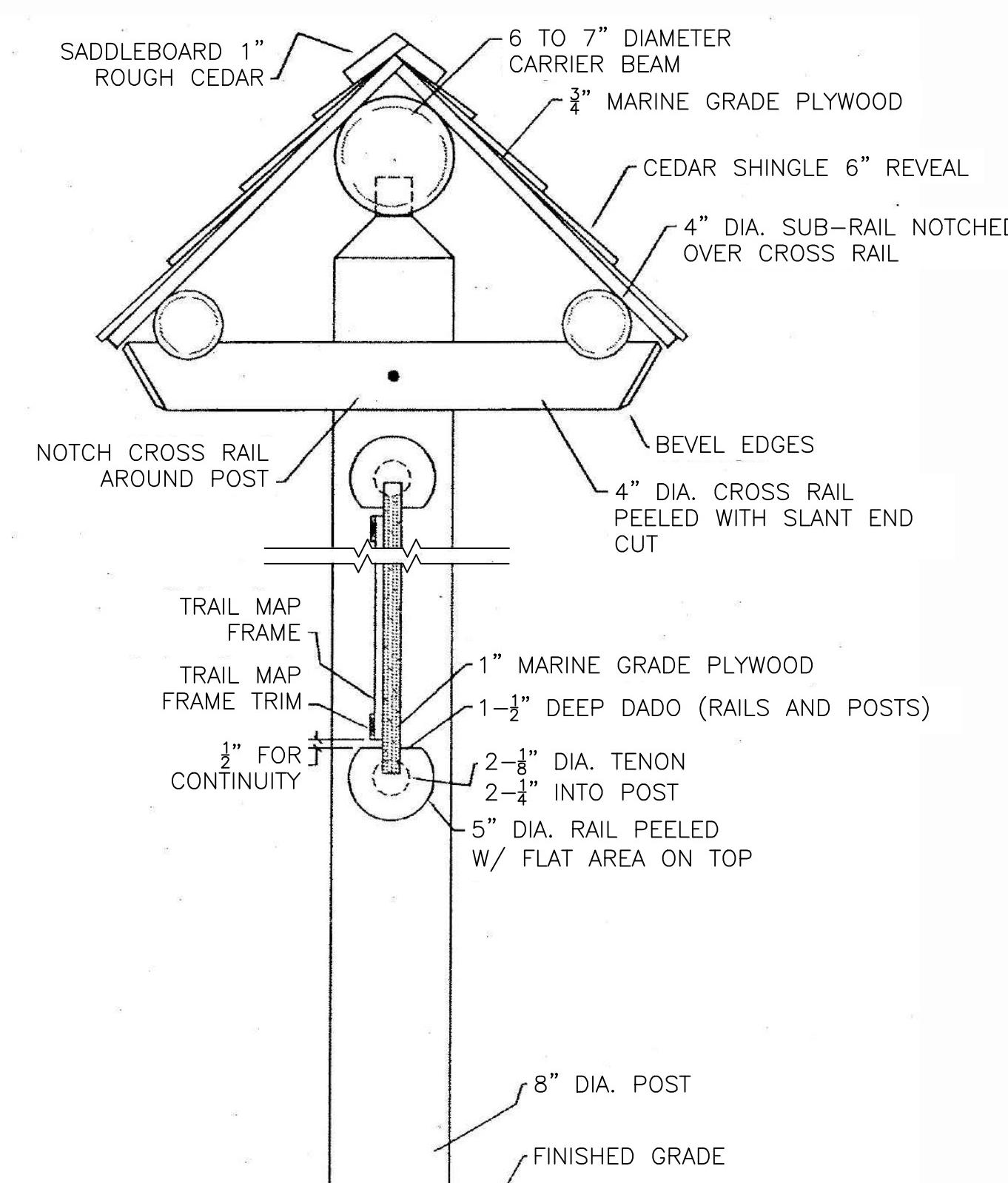
NOT TO SCALE



PLAN



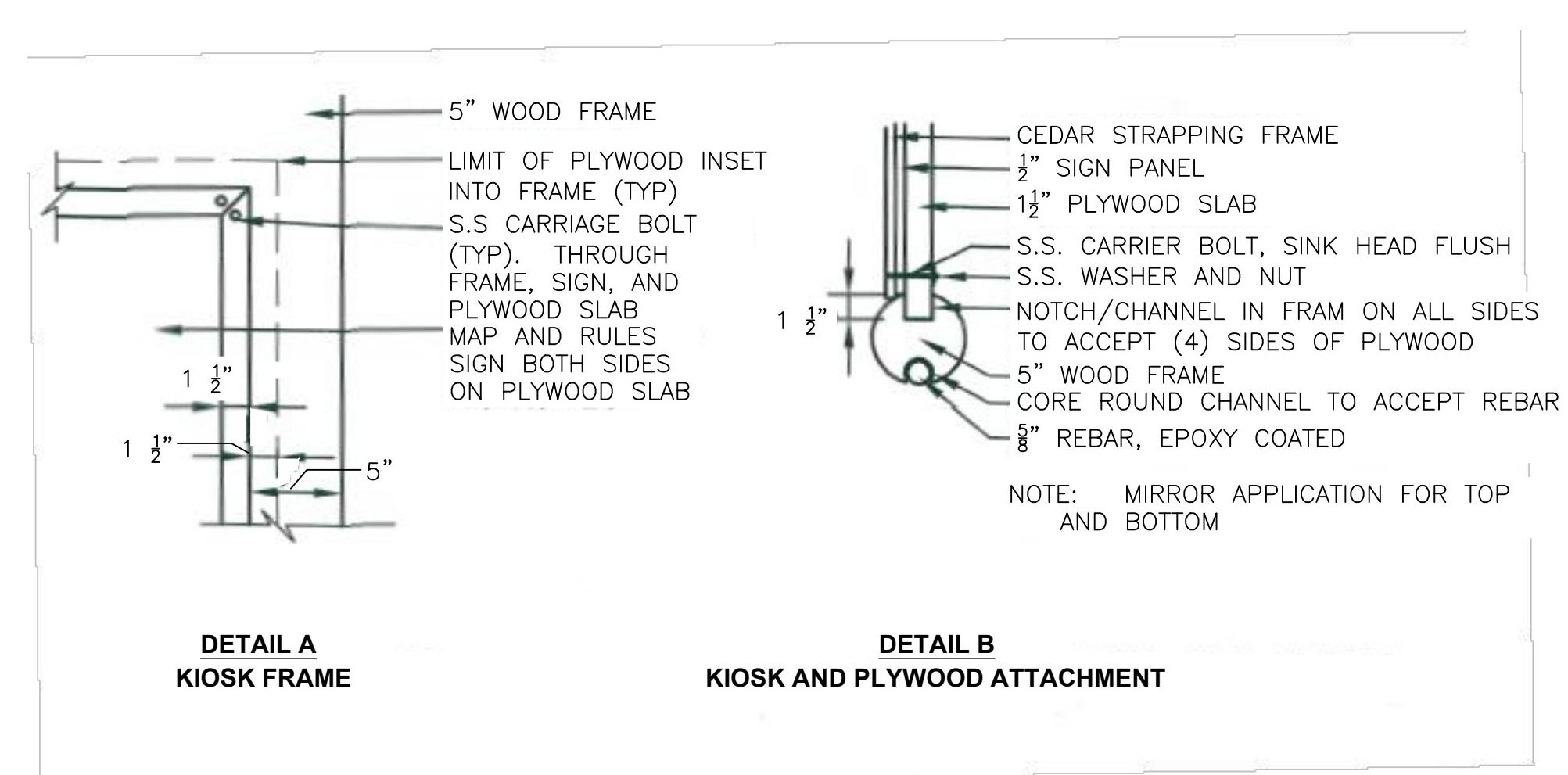
MESSAGE BOARD KIOSK



U-SHAPED BICYCLE RACK

NOTES:

1. BICYCLE RACK UNITS SHALL CONSIST OF INVERTED "U" PIPES
2. 2IN NOM SCHED 40, ASTMA 500 WELDED SEAMLESS STEEL PIPE CONSTRUCTION
3. INVERTED "U" PIPES SHALL BE PLACED PARALLEL TO EACH OTHER 36-INCHES O.C.
4. CONCRETE SHALL BF 4000 PSI. 3/4IN. 565 CFMENT CONCRETE



DETAIL A

DETAIL B

NOTE: MESSAGE BOARD MAP SIGN TO BE
PRINTED DOUBLE SIDED

- NOTES:**
- ALL METAL HARDWARE, INCLUDING BOLTS, SCREWS, NAILS, ANGLES, STRAPS, STEEL PLATES AND JOIST HANGERS SHALL BE STAINLESS STEEL.
 - TIMBER SIZES SHOWN ON THIS PLAN ARE NOMINAL, EXCEPT FOR GLULAM BEAM.
 - ALL TIMBER SHALL BE PRESSURE TREATED WITH ALKALINE COPPER QUAT (ACQ), CONFORMING TO AWPA STANDARDS.
 - ALL TIMBER SHALL BE SOUTHERN PINE NO. 1 DENSE, $F_b=2000\text{PSI}$, EXCEPT BLOCKING WHICH MAY BE NO. 2.
 - RAILS TO SPAN A MINIMUM OF 3 POSTS.
 - PILOT HOLES SHALL BE DRILLED PRIOR TO DRIVING OF SCREWS.
 - BOLT HOLES SHALL BE PRE DRILLED TO A DIAMETER $\frac{1}{6}$ " LARGER THAN BOLT DIAMETER.
 - ALL HOLES SHALL BE TREATED THOROUGHLY PRIOR TO INSTALLING SCREWS OR BOLTS.
 - CEMENT CONCRETE MASONRY SHALL BE 4000PSI - $\frac{3}{4}$ " - 610#.
 - REINFORCING STEEL SHALL BE ASTM A615, GRADE 60 EPOXY COATED.
 - MINIMUM CLEAR COVER FOR REINFORCING SHALL BE 3" FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH
 - AND 2" FOR ALL OTHER LOCATIONS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE HELICAL PILES, INCLUDING THE CONNECTIONS BETWEEN THE HELICAL PILES AND THE CONCRETE PILE CAP AND GLULAM BEAM, AND LATERAL BRACING FOR PILES.
 - CONTRACTOR SHALL SUBMIT TO THE ENGINEER, ALL NECESSARY CALCULATIONS AND DETAILS FOR REVIEW AND APPROVAL, PRIOR TO CONSTRUCTION.
 - HELICAL PILE AND CONNECTION DESIGNS SHALL BE IN ACCORDANCE WITH THE MASSDOT BRIDGE DESIGN MANUAL AND AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, CURRENT ED., AND SHALL BE DESIGNED FOR SERVICE LOADS 8.0 KIPS VERTICAL FORCE PER PILE TO BE CARRIED BY VERTICAL PILES, AND SERVICE LOADS 5.0 KIPS LATERAL FORCE PER PILE TO BE CARRIED BY THE BATTERED PILES.
 - MINIMUM NUMBER OF VERTICAL PILES EQUALS 8.
 - MINIMUM NUMBER OF BATTERED PILES EQUALS 3.
 - MAXIMUM SPACING BETWEEN PILES EQUALS 10'-0".

